ATTACHMENT 1

2072
EE

Department of Economic and Community Development

Connecticut
still revolutionary

received
5-21-14 DoH

May 20, 2014

Hermia M. Delaire
Program Manager
CDBG - Sandy Disaster Recovery Program
Department of Housing
505 Hudson Street
Hartford, CT 06106

Subject: Department of Housing Superstorm Sandy Reviews
153 Twin Brook Road
Hamden, CT

Dear Ms. Delaire:

The State Historic Preservation Office has reviewed the information submitted for the above-named pursuant to the provisions of Section 106 of the National Historic Preservation Act of 1966. It is the opinion of this office that the property located at 153 Twin Brook Road is not eligible for listing on the National Register of Historic Places at this time.

Based on the information provided, the proposed rehabilitation of 153 Twin Brook Road will have no effect on the state's cultural resources.

This office appreciates the opportunity to have reviewed and commented upon the project.

For further information please contact me at (860) 256-2756 or mary.dunne@ct.gov.

Sincerely,

Mary B. Dunne

Mary B. Dunne
Deputy State Historic Preservation Officer

MAP SCALE 1" = 500'

250 0 500 1000 FEET

METER

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

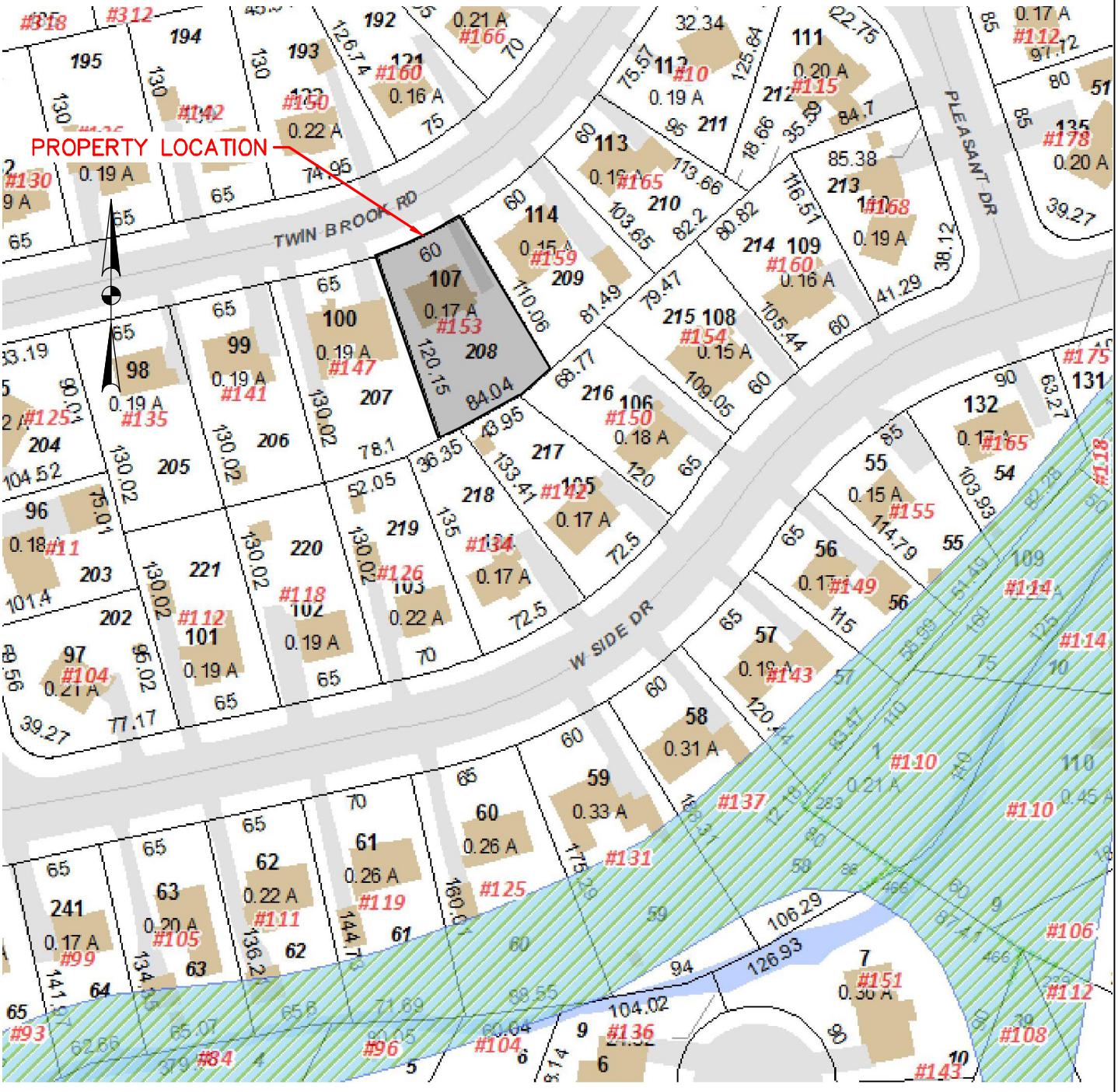
1% annual chance floodplain boundary

0.2% annual chance floodplain boundary

FIRM #09009C0427H

ATTACHMENT 2

MAP SOURCE: TOWN OF HAMDEN GIS



Wetland Zones

GRAPHIC SCALE

100 0 50 100

(IN FEET)

DIVERSIFIED TECHNOLOGY CONSULTANTS
2321 Whitney Avenue - Hamden Center II - Hamden CT 06518
Ph: 203 239 4200 Fax: 203 234 7376

DEPARTMENT OF HOUSING
COMMUNITY DEVELOPMENT BLOCK GRANT
DISASTER RECOVERY

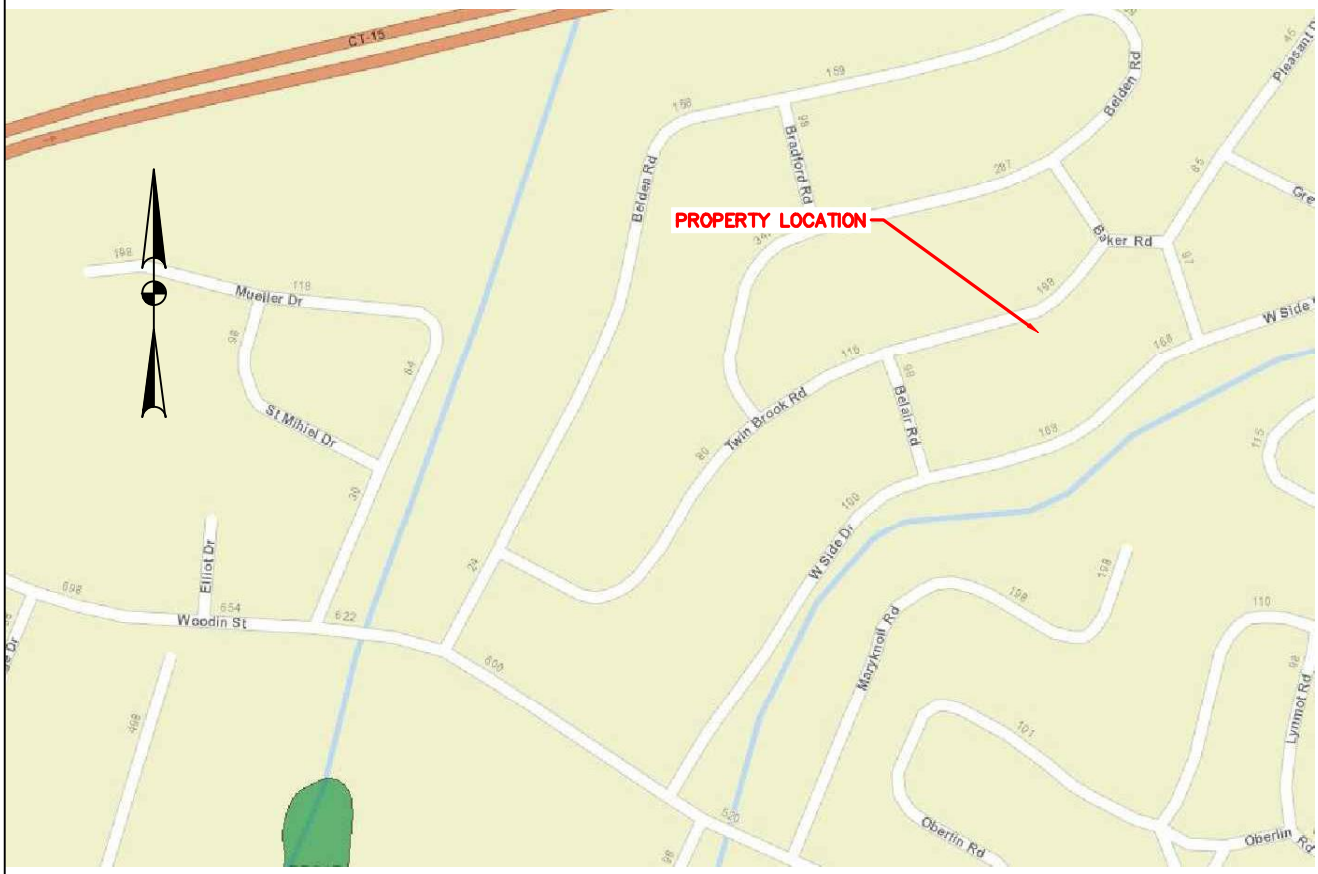
153 TWIN BROOK ROAD
HAMDEN, CT

ATTACHMENT 3
WETLANDS MAP

SCALE:	1"=100'	DRAWN BY:	LEC
DATE:	06/10/2014	CHECKED BY:	JAB

PROJECT NUMBER: 13-449-003 APPLICANT NO: 2072

MAP SOURCE: FWS NATIONAL WETLANDS INVENTORY



Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

GRAPHIC SCALE

500 0 250 500

(IN FEET)

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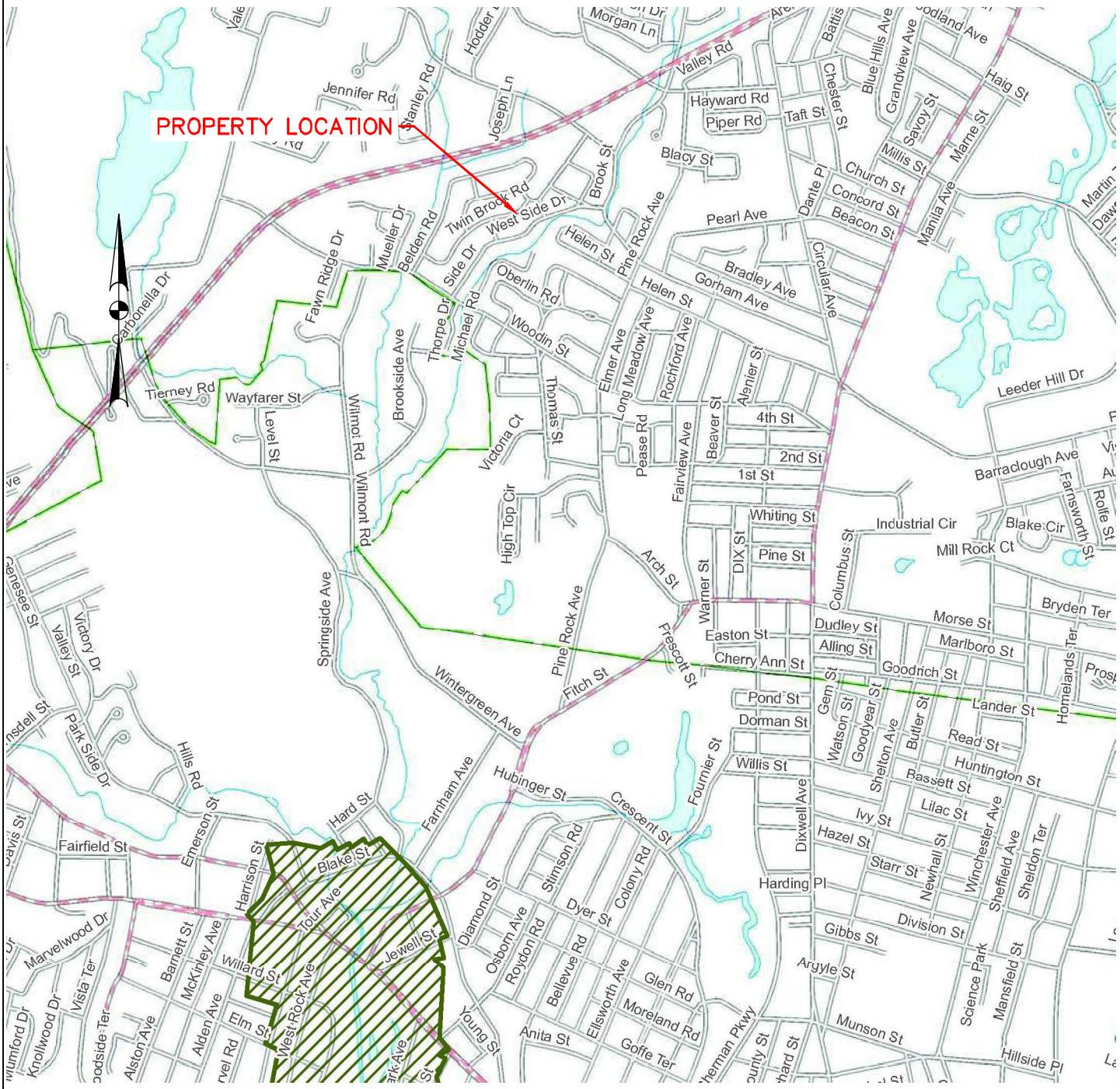
DISASTER RECOVERY

153 TWIN BROOK ROAD
HAMDEN, CT

ATTACHMENT 4
FWS WETLANDS MAP

PROJECT NUMBER: 13-449-003	APPLICANT NO: 2072	SCALE: 1"=500'	DRAWN BY: LEC
		DATE: 06/10/2014	CHECKED BY: JAB

MAP SOURCE: CT DEEP



Coastal Boundary

GRAPHIC SCALE

2000 0 1000 2000

(IN FEET)

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DISASTER RECOVERY

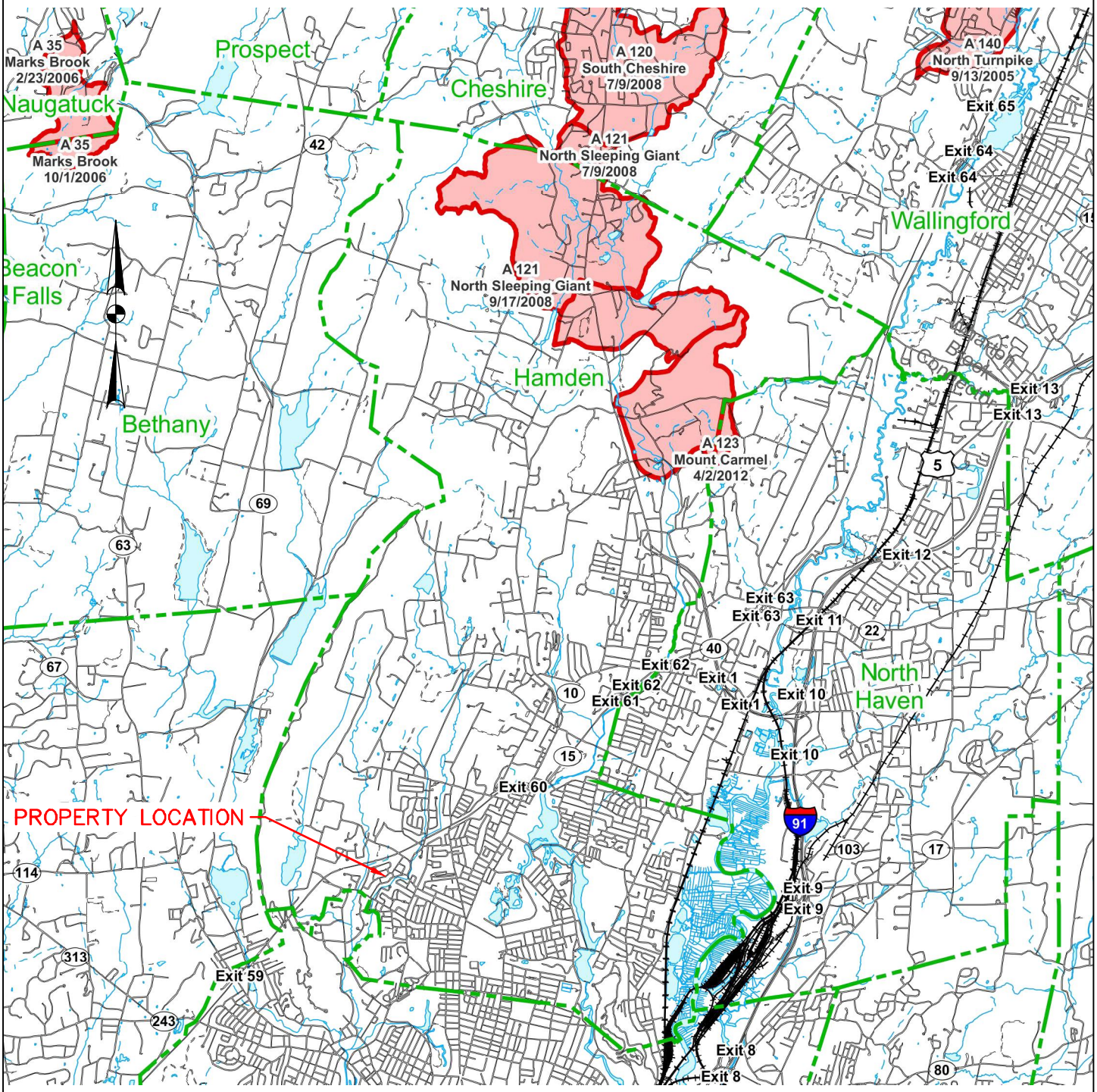
153 TWIN BROOK ROAD
HAMDEN, CT

ATTACHMENT 5
CAM AREA MAP

SCALE:	1"=2000'	DRAWN BY:	LEC
DATE:	06/10/2014	CHECKED BY:	JAB

PROJECT NUMBER: 13-449-003 APPLICANT NO: 2072

MAP SOURCE: CT DEEP



Level A APA (Final Adopted)
Level A APA (Final)
Level B APA (Preliminary)
Town Boundary

GRAPHIC SCALE
8000 0 4000 8000
(IN FEET)

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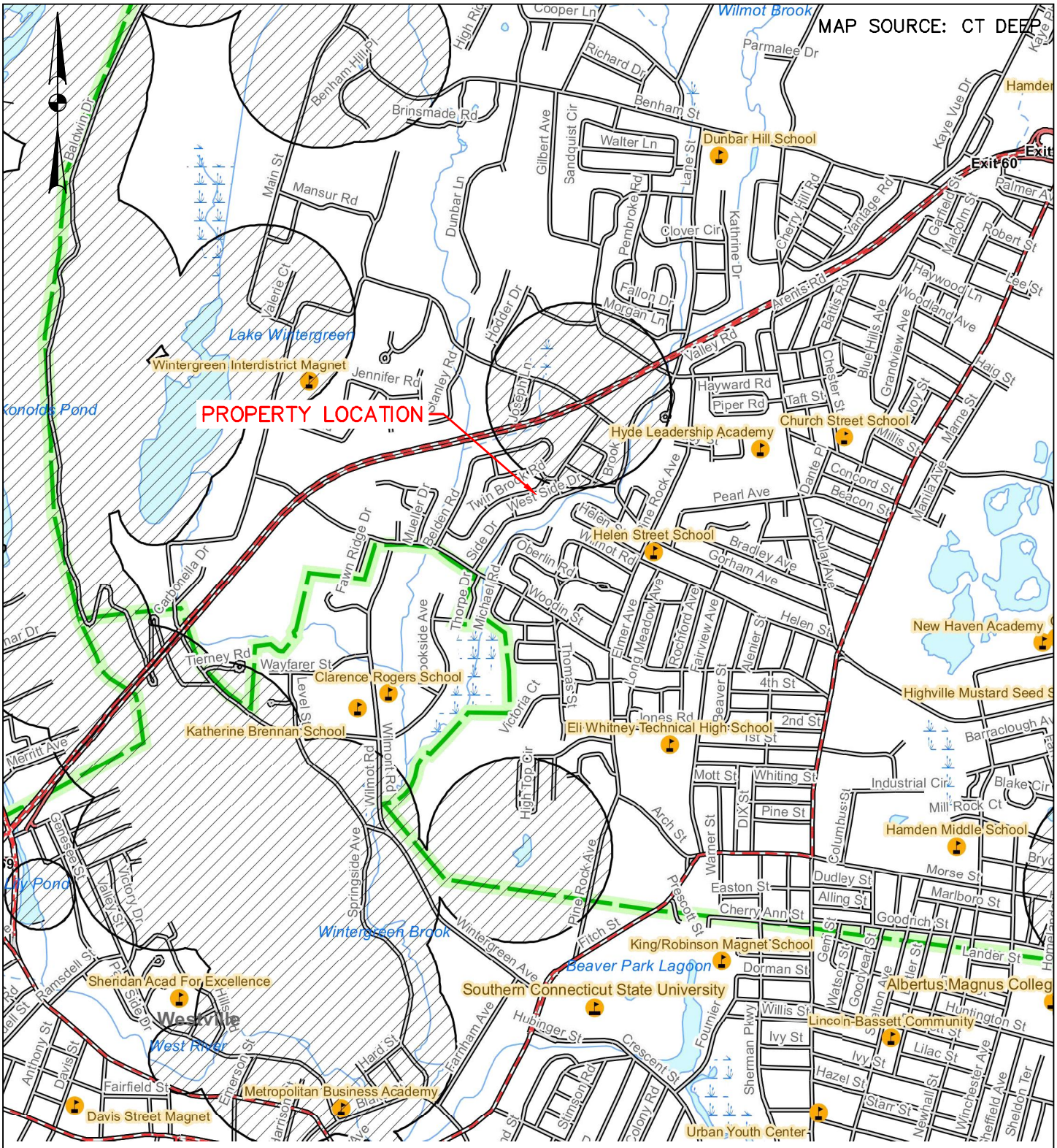
COMMUNITY DEVELOPMENT BLOCK GRANT
DISASTER RECOVERY

153 TWIN BROOK ROAD
HAMDEN, CT

APPENDIX 6
AQUIFER PROTECTION AREA MAP

PROJECT NUMBER: 13-449-003	APPLICANT NO: 2072	SCALE: 1"=8000'	DRAWN BY: LEC
		DATE: 06/10/2014	CHECKED BY: JAB



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DEPARTMENT OF HOUSING
COMMUNITY DEVELOPMENT BLOCK GRANT
DISASTER RECOVERY

153 TWIN BROOK ROAD
HAMDEN, CT

ATTACHMENT 7
NDDB AREAS

PROJECT NUMBER:	13-449-003	APPLICANT NO:	2072	SCALE: 1"=2000'	DRAWN BY: LEC
				DATE: 06/10/2014	CHECKED BY: JAB

U.S. Fish and Wildlife Service

Natural Resources of Concern

This resource list is to be used for planning purposes only — it is not an official species list.

Endangered Species Act species list information for your project is available online and listed below for the following FWS Field Offices:

New England Ecological Services Field Office
70 COMMERCIAL STREET, SUITE 300
CONCORD, NH 3301
(603) 223-2541
http://www.fws.gov/newengland

Project Name:

153 Twin Brook Road Hamden, CT 06514

U.S. Fish and Wildlife Service

Natural Resources of Concern

Project Location Map:

Project Counties:

New Haven, CT

Geographic coordinates (Open Geospatial Consortium Well-Known Text, NAD83):

MULTIPOLYGON (((-72.9499484 41.3524028, -72.9496689 41.3524565, -72.9494794 41.3521184, -72.9496638 41.3520374, -72.949914 41.3520143, -72.9499484 41.3524028)))

Project Type:

** Other **

U.S. Fish and Wildlife Service

Natural Resources of Concern

Endangered Species Act Species List (USFWS Endangered Species Program).

There are no listed species found within the vicinity of your project.

Critical habitats within your project area:

There are no critical habitats within your project area.

FWS National Wildlife Refuges (USFWS National Wildlife Refuges Program).

There are no refuges found within the vicinity of your project.

FWS Migratory Birds (USFWS Migratory Bird Program).

Most species of birds, including eagles and other raptors, are protected under the Migratory Bird Treaty Act (16 U.S.C. 703). Bald eagles and golden eagles receive additional protection under the Bald and Golden Eagle Protection Act (16 U.S.C. 668). The Service's Birds of Conservation Concern (2008) report identifies species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become listed under the Endangered Species Act as amended (16 U.S.C 1531 et seq.).

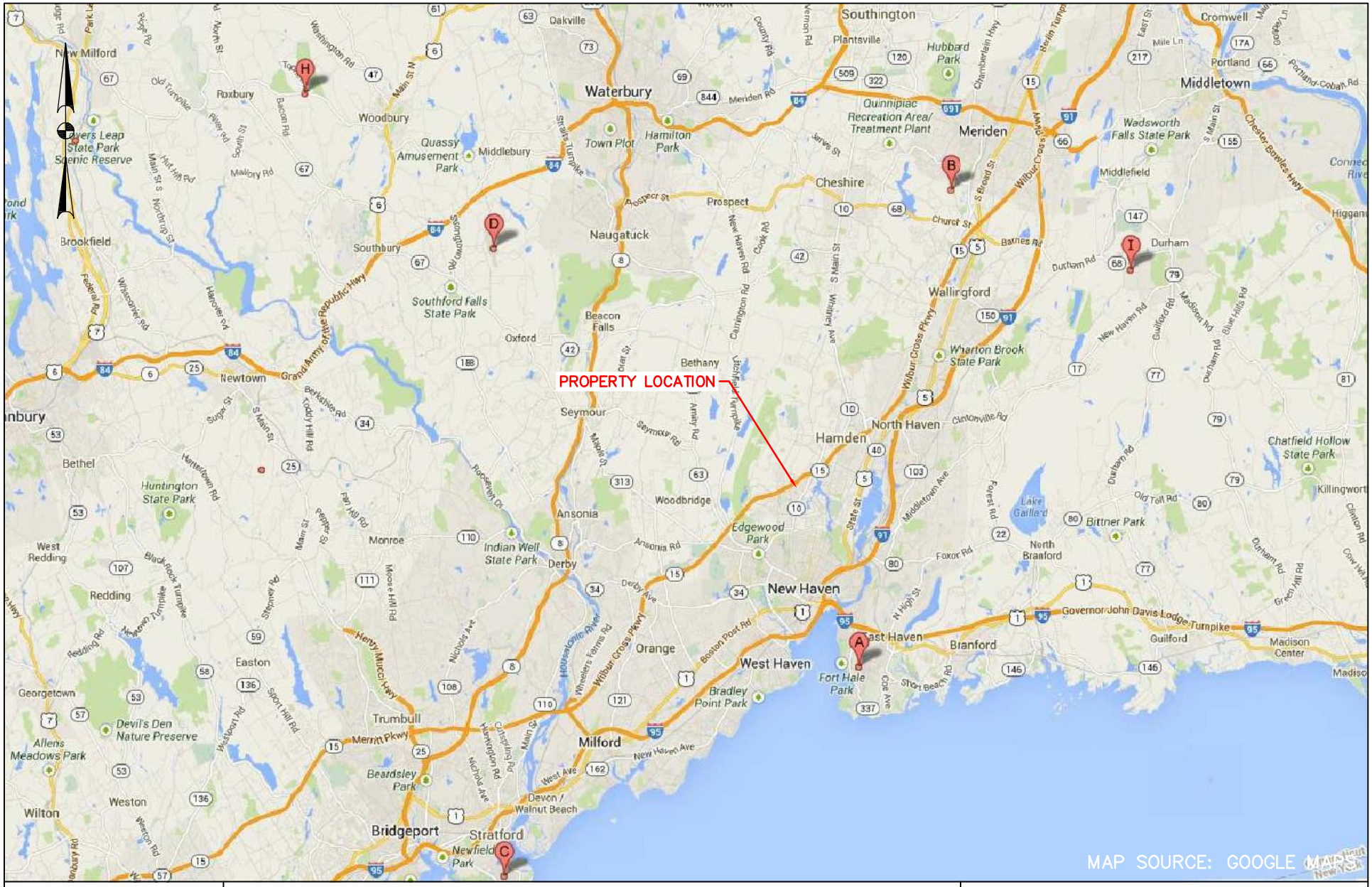
Migratory bird information is not available for your project location.

NWI Wetlands (USFWS National Wetlands Inventory).

The U.S. Fish and Wildlife Service is the principal Federal agency that provides information on the extent and status of wetlands in the U.S., via the National Wetlands Inventory Program (NWI). In addition to impacts to wetlands within your immediate project area, wetlands outside of your project area may need to be considered in any evaluation of project impacts, due to the hydrologic nature of wetlands (for example, project activities may affect local hydrology within, and outside of, your immediate project area). It may be helpful to refer to the USFWS National Wetland Inventory website. The designated FWS office can also assist you. Impacts to wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes. Project Proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate U.S. Army Corps of Engineers District.

Natural Resources of Concern

There are no wetlands found within the vicinity of your project.



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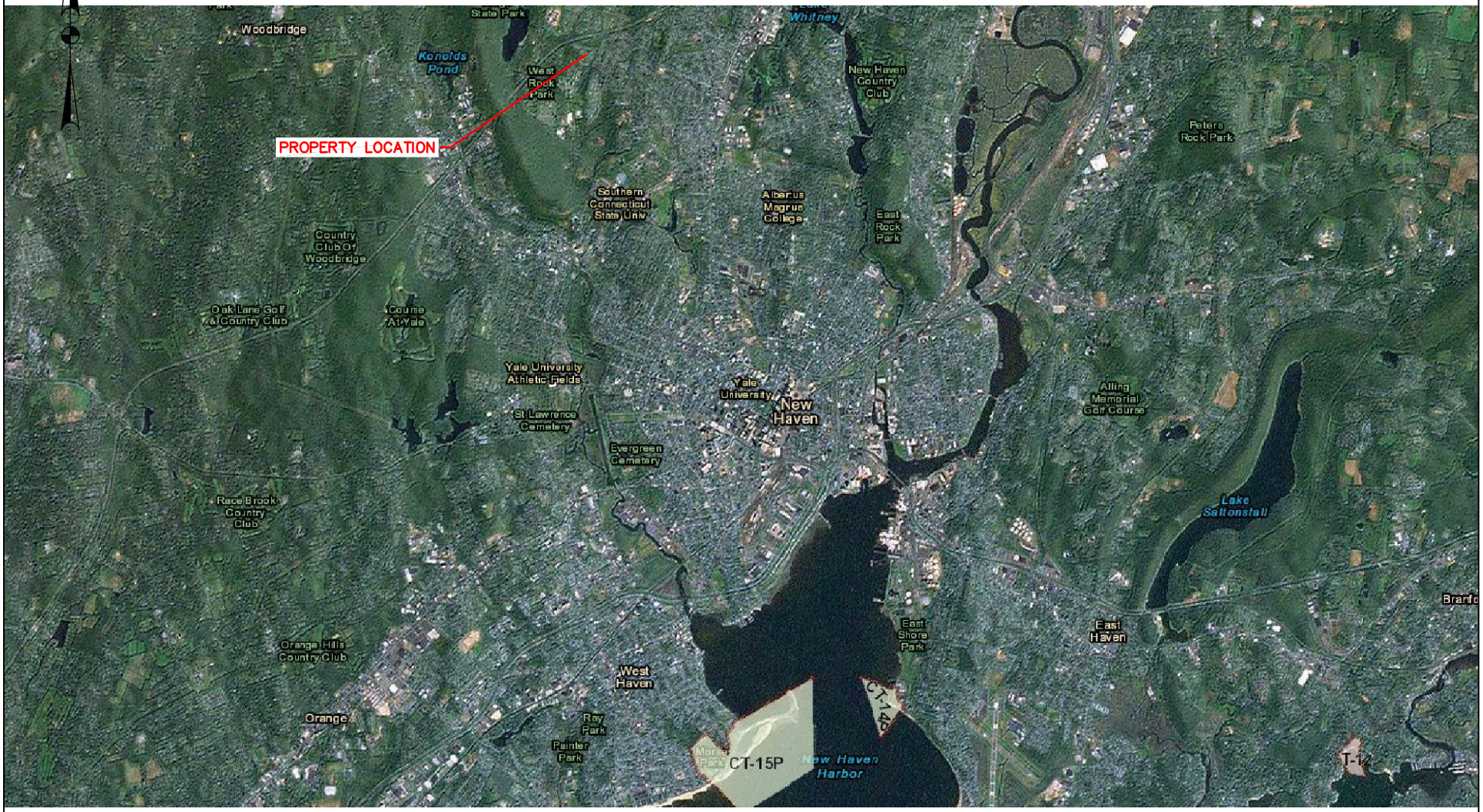
DEPARTMENT OF HOUSING
COMMUNITY DEVELOPMENT BLOCK GRANT
DISASTER RECOVERY

153 TWIN BROOK ROAD
HAMDEN, CT

ATTACHMENT 9
AIRPORT VICINITY MAP

PROJECT NUMBER:	13-449-003	APPLICANT NO:	2072
SCALE:	NTS	DRAWN BY:	LEC
DATE:	06/10/14	CHECKED BY:	JAB



MAP SOURCE: U.S. FISH AND WILDLIFE SERVICE

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COMMUNITY DEVELOPMENT BLOCK GRANT
DISASTER RECOVERY

153 TWIN BROOK ROAD
HAMDEN, CT

ATTACHMENT 10
COASTAL BARRIER MAP

PROJECT NUMBER:	13-449-003	APPLICANT NO:	2072
SCALE:	NTS	DRAWN BY:	LEC
DATE:	06/10/14	CHECKED BY:	JAB

ChemScope INDUSTRIAL HYGIENE • ENVIRONMENTAL CHEMISTRY
15 Moulthrop Street, North Haven, CT 06473-3686 • Phone (203) 865-5605 • Fax (203) 498-1610 • www.chem-scope.com

Scott Feulner
Diversified Technology Consultants (DTC)
2321 Whitney Avenue, Suite 301
Hamden, CT 06518

8/11/2014

**PRE-REHABILITATION LEAD HAZARD RISK ASSESSMENT &
LEAD BASED PAINT PRE-RENOVATION XRF SCREENING
SITE 003 (BRAKEEM) – 153 TWIN BROOK ROAD, HAMDEN, CT
APPLICATION #2072, CS#183-76, 4/25/2014, 5/16/2014 AND 8/6/2014, Page 1 of 10**

TABLE OF CONTENTS

Attachments:

Report Distribution:

Scott Feulner, DTC Scott.Feulner@teamdtc.com
Curtis Graham, DTC graham.curtis@teamdtc.com
Michael Casey, DTC michael.casey@teamdtc.com

File Location:

NAS AAUM-Reports\LeadInsp\DS-RiskAssess_June2014.doc

INTRODUCTION

EXECUTIVE SUMMARY: As a result of the Lead Hazard Risk Assessment and the limited Lead-Based Paint Testing (Assessment) conducted on 4/25/2014 and 8/6/2014, it was found that lead-based surface coatings (paint) and lead hazards were not present on the subject property as of the date of the Assessment. Lead (as defined by OSHA regulations 29 CFR 1926.62) and Lead Based Paint (as defined by USC Title 15 – Chapter 53- Toxic Substance Control) ***was NOT detected*** on surfaces and/or components within the scope of the inspection, the subject renovation project is not subject to hazardous waste evaluation requirements.

BUILDING DESCRIPTION: The subject building is a single-family, one-story, ranch-style house totaling approximately 1000 sq ft, which was built in 1951 of wood-frame construction. Heat is supplied from a furnace in the basement, through forced air ducts. At the time of our screening, there were no children under the age of six residing at this subject house and the house was not being used as a daycare facility.

BACKGROUND: We understand the subject house suffered damage as a result of hurricane Sandy on October 29-30, 2012. The house is scheduled to be renovated. We understand the storm caused roof damage which lead to moisture damage in the Kitchen and Living Room. Based on this damage the following items are scheduled for removal and replacement: kitchen floor, kitchen ceiling, kitchen walls, living room ceiling and living room wall A. Additionally smoke and carbon monoxide detectors are to be installed in the following sheetrock ceilings: all three bedrooms, first floor hallway, basement stairs and basementFamily Room. The addition of the smoke detectors was the reason for the second site visit on 5/16/2014. The Lead Risk Assessment was done on 8/6/2014 to comply with HUD requirements for the project.

SCOPE OF OUR WORK: Our work would include the following:

- A Lead Hazard Risk Assessment
- XRF Screening of Lead Based Paint of representative painted surfaces from the interior of the Kitchen and Living Room only.
- Additionally XRF screening of ceiling surfaces in all three bedrooms, first floor hallway, basement stairs and basementFamily Room was done on 5/16/2014.
- Site reference drawing.
- A hazardous waste evaluation.
- A report of the findings.

Lead paint chip and TCLP sampling are not in our scope of work.

This investigation and information provided in this report depends partly on background information provided by the client. This report is intended for the use of the client. The scope of services performed may not be appropriate for other users and any use of this report by third parties is at their sole risk. This report is intended to be used in its entirety. No excerpts may be taken to be representative of this report.

INTRODUCTION (cont)

QUALIFICATIONS: The Inspection was conducted by Daniel P. Sullivan, CT DPH Certified DPH Lead Inspector/Risk Assessor #002131, Radiation Safety Training, RMD 12/2/94. Dan was assisted by Ziyang Wang. Chem Scope's DPH lead license # is CC000164.

METHOD OF TESTING: Spectrum Analyzer XRF (x-ray fluorescence). Instrument used: RMD LPA-1, Serial # 1647 in Quick Mode. The unit source (Cobalt 57) for unit 1647 was replaced November 2nd, 2012. The XRF detects paint in all layers down to the painted substrate. In other words if lead paint is painted over with new paint, the lead paint is still detected by this procedure. When paint is covered with metal or plastic trim such as siding or by carpet, the lead paint is usually not detectable. This instrument is registered with the State of Connecticut Dept of Energy and Environmental Protection and is Generally Licensed under the NRC. This is one of the two methods, which are approved under the CT Dept of Public Health (DPH) regulations. This is a non-destructive test.

The dust and soil samples were sent for analysis to Eastern Analytical Services (EAS), an AIHA accredited Laboratory and a CT DPH approved Environmental Laboratory in regards to this test, using Atomic Absorption analysis.

TEST PARAMETERS FOR XRF TESTING USING THIS INSTRUMENT: *OSHA 1926.62 Definition: Lead* means metallic lead, all inorganic lead compounds, and organic lead soaps. Excluded from this definition are all other organic lead compounds. XRF readings of 1.0 mg/cm^2 or higher are lead based paint as defined by USC Title 15 – Chapter 53- Toxic Substance Control and XRF reading with any detectable amount of lead detected are defined as Lead by OSHA standard 1926.62.

XRF CALIBRATION CHECK: Standard Reference Material (SRM) paint film nearest to 1.0 mg/cm^2 within the National Institute of Standards and Technology (NIST) SRM is used to Calibrate the XRF. Calibration Readings are taken at the beginning and end of a job and every four (4) hours during the job with three (3) readings per set. The expiration date of the standard used is 7/1/20.

QUALITY CONTROL PROCEDURES: The XRF is used in accordance with Manufacturer's Performance Characteristics Sheet and instructions. See test data attached for details. Ten (or if <10, then the total number of tests conducted) testing combinations for re-testing from each unit are selected and checked in either 15 second or 60 second readings.

STATEMENT ON ACCURACY: The XRF Calibration checks were acceptable with each of the three (3) readings before, during (if applicable) and after the testing between 0.7 mg/cm^2 and 1.3 mg/cm^2. See attached XRF data sheets for documentation of proper calibration check sequence.

REPORT CONVENTIONS: Rooms are sometimes given arbitrary numbers to avoid ambiguity. Please refer to the enclosed schematic drawings of the site. Samples are referenced by the side of the building they are facing, as indicated on the drawings. Side A is the street side (front), Side B is the left side, Side C is the rear and Side D is the right side.

INTRODUCTION (cont)

ONGOING MONITORING: Ongoing monitoring is necessary in all dwellings in which LBP is known or presumed to be present. At these dwellings, the very real potential exists for LBP hazards to develop. Hazards can develop by means such as, but not limited to: the failure of lead hazard control measures; previously intact LBP becoming deteriorated; dangerous levels of lead-in-dust (dust lead) re-accumulating through friction, impact, and deterioration of paint; or, through the introduction of contaminated exterior dust and soil into the interior of the structure. Ongoing monitoring typically includes two different activities: re-evaluation and annual visual assessments. A re-evaluation is a risk assessment that includes limited soil and dust sampling and a visual evaluation of paint films and any existing lead hazard controls. Re-evaluations are supplemented with visual assessments by the Client, which should be conducted at least once a year, when the Client or its management agent (if the housing is rented in the future) receives complaints from residents about deteriorated paint or other potential lead hazards, when the residence (or if, in the future, the house will have more than one dwelling unit, any unit that turns over or becomes vacant), or when significant damage occurs that could affect the integrity of hazard control treatments (e.g., flooding, vandalism, fire). The visual assessment should cover the dwelling unit (if, in the future, the housing will have more than one dwelling unit, each unit and each common area used by residents), exterior painted surfaces, and ground cover (if control of soil-lead hazards is required or recommended). Visual assessments should confirm that all Paint with known or suspected LBP is not deteriorating, that lead hazard control methods have not failed, and that structural problems do not threaten the integrity of any remaining known, presumed or suspected LBP.

The visual assessments do not replace the need for professional re-evaluations by a certified risk assessor. The re-evaluation should include:
1. A review of prior reports to determine where lead-based paint and lead-based paint hazards have been found, what controls were done, and when these findings and controls happened;
2. A visual assessment to identify deteriorated paint, failures of previous hazard controls, visible dust and debris, and bare soil;
3. Environmental testing for lead in dust, newly deteriorated paint, and newly bare soil; and
4. A report describing the findings of the reevaluation, including the location of any lead-based paint hazards, the location of any failures of previous hazard controls, and, as needed, acceptable options for the control of hazards, the repair of previous controls, and modification of monitoring and maintenance practices.

The first reevaluation should be conducted no later than two years after completion of hazard controls, or, if specific controls or treatments are not conducted, two years from the beginning of ongoing lead-based paint monitoring and maintenance activities. Subsequent reevaluations should be conducted at intervals of two years, plus or minus 60 days. If two consecutive reevaluations are conducted two years apart without finding a lead-based paint hazard, reevaluation may be discontinued.
Please refer to your community development agency, housing authority, or other applicable agency for additional local/regional regulations and guidelines governing re-evaluation activities.

INTRODUCTION (cont)

DISCLOSURE REGULATIONS: A copy of this complete report must be made available to new lessees (tenants) and/or must be provided to purchasers of this property under Federal law before they become obligated under any future lease or sales contract transactions (Section 1018 of Title X – found in 24 CFR Part 35 and 40 CFR Part 745), until the demolition of this property. Landlords (Lessors) and/or sellers are also required to distribute an educational pamphlet developed by the EPA entitled *"Protect Your Family From Lead in Your Home"* and include standard warning language in their leases or sales contracts to ensure that parents have the information they need to protect their children from LBP hazards.

FUTURE REMODELING PRECAUTIONS: It should be noted that during this Assessment, a limited number of areas were tested for the presence of LBP. All LBP, dust, and soil hazards that were identified are addressed in this report. However, LBP, dust lead hazards, and/ or soil lead hazards may be present at other locations of the property. Additional paint testing should precede any future remodeling activities that occur at any untested areas. Additional dust and/or soil sample collection and analysis should follow any hazard control activity, repair, remodeling, or renovation effort, and any other work efforts that may in any way disturb LBP and/or any lead containing materials. These Assessment activities will help the Client and owner to ensure the health and safety of the occupants and the neighborhood. Details concerning lead-safe work techniques and approved hazard control methods can be found in the HUD publication entitled: *"Guidelines for the Evaluation and Control of LBP Hazards in Housing"* (*www.hud.gov/offices/lead*). Remodeling, repair, renovation and painting at the residence beyond the scale of minor repair and maintenance activities must be conducted in accordance with the EPA's Lead Repair, Renovation, and Painting Rule (within 40 CFR part 745); see the EPA's website on the RRP Rule at *http://www.epa.gov/lead/pubs/renovation.htm* for the scope and requirements of that Rule. Lead-based paint abatement or lead-based paint hazard abatement at the residence must be conducted in accordance with the EPA's Lead Abatement Rule (also within 40 CFR 745); see the EPA's website for Lead Abatement Professionals at *http://www.epa.gov/lead/pubs/traincert.htm*.

CONDITIONS & LIMITATIONS: Staff of ChemScope Inc. has performed the tasks listed above requested by the our client in a thorough and professional manner consistent with commonly accepted standard industry practices, using state of the art practices and best available known technology, as of the date of the assessment. ChemScope cannot guarantee and does not warrant that this Assessment/Limited LBP Testing has identified all adverse environmental factors and/or conditions affecting the subject property on the date of the Assessment. ChemScope cannot and will not warrant that the Assessment/Limited Testing that was requested by the client will satisfy the dictates of, or provide a legal defense in connection with, any environmental laws or regulations. It is the responsibility of the client to know and abide by all applicable laws, regulations, and standards, including EPA's Renovation, Repair and Painting regulation.

The results reported and conclusions reached by ChemScope are solely for the benefit of the client. The results and opinions in this report, based solely upon the conditions found on the property as of the date of the Assessment, will be valid only as of the date of the Assessment. ChemScope assumes no obligation to advise the client of any changes in any real or potential lead hazards at this residence that may or may not be later brought to our attention. Further conditions and limitations to this contracted report are included in the general terms and conditions supplied to the client with the contract for services.

INSPECTION REPORT SYNOPSIS

LOCATION NAME AND ADDRESS: Site 003 (Brakeem), Application #2072
153 Twin Brook Road, Hamden, CT

INSPECTION DATE(S): 4/25/2014, 5/16/2014 and 8/6/2014.

XRF Testing Results:

Limited LBP Testing, conforming with HUD regulation 24 CFR 35.930(c), (d) was accomplished at this residence on surfaces found to have deteriorated paint and/or where it was indicated to the Assessor that planned renovation would occur. No paint chip samples were taken. On 4/25/2014, 5/16/2014 and 8/6/2014 a total of 108 tests (assays) were taken at a limited number of specified surfaces on the inside and outside of the residence using a x-ray fluorescence analyzer. Deteriorated paint and areas that were specified to be disturbed during the planned renovation project were tested.

Lead concentrations that meet or exceed the HUD published levels identified as being potentially dangerous [> 1.0 mg/cm2] were not encountered. Lead as defined by OSHA, DPH and EPA was not detected within scope of inspection.

OSHA 1926.62 Definition: Lead means metallic lead, all inorganic lead compounds, and organic lead soaps. Excluded from this definition are all other organic lead compounds.

XRF readings of 1.0 mg/cm^2 or higher are lead based paint as defined by USC Title 15 – Chapter 53- Toxic Substance Control and XRF reading with any detectable amount of lead detected are defined as Lead by OSHA standard 1926.62.

LIMITATIONS OF SCREENING: Not all painted surfaces were tested. Consequently, if a surface was not tested assume it contains Lead until proven otherwise. See attached data sheets for a list of surfaces tested.

INSPECTION REPORT SYNOPSIS (cont)

RESIDENT QUESTIONNAIRE: A resident questionnaire was completed as part of the Assessment, to help identify particular use patterns, which may be associated with potential LBP hazards, such as opening and closing windows painted with LBP. The answers to the questionnaire were obtained during a phone interview with the owner/occupant, Ms. Brakeem on 8/6/2014. Following is a summary of the information obtained during the interview:

Children in the Household:	None, and none visit regularly
Children's bedroom locations:	N/A
Children's eating locations:	N/A
Primary interior play area(s):	N/A
Primary exterior play area(s):	N/A
Toy Storage:	N/A
Pets:	2 Dogs
Children's blood lead testing history:	Unknown
Observed chewed surfaces:	None
Women of child bearing age:	No
Previous lead testing:	None
Most frequently used entrances:	Side A Front Door, Side B Kitchen door used 2nd most frequently
Most frequently opened windows:	All of them seasonally
Structure cooling method:	Window air conditioning units in Living Room and 3 Bedrooms
Gardening – type and location(s):	N/A
Plans for landscaping:	None
Cleaning regiment:	Daily Living Room and Kitchen, Weekly Bedrooms
Cleaning methods:	Mopping, sweeping, dusting, vacuuming
Recently completed renovations:	New Roof last year, New Siding and windows last month
Demolition debris on site:	Dumpster for was located in driveway
Resident(s) with work lead exposure:	None
Planned renovations:	The scope of the renovation involves removal and replacement: kitchen floor, kitchen ceiling, kitchen walls, living room ceiling and living room wall A. Additionally smoke and carbon monoxide detectors are to be installed in the following sheetrock ceilings: all three bedrooms, first floor hallway, basement stairs and basementFamily Room.

INSPECTION REPORT SYNOPSIS (cont)

Building Conditions Survey

Date of Construction:	1951
Apparent Building Use:	Residential
Setting:	Residential
Front Entry Faces:	Side A, Faces North
Design:	1-Story, Ranch-Style
Construction Type:	Wood framed
Lot Type:	Flat
Roof:	New Roof Last Year
Foundation:	Concrete/Cinderblock
Front Lawn Condition:	Approx. < 10% bare soil
Back Lawn Condition:	Approx. < 10% bare soil
Drip Line Condition:	Good – no paint chips seen
Site Evaluation:	Very Good
Exterior Structural Condition:	Very Good
Interior Structural Condition:	Very Good
Overall Building/Site Condition:	Very Good

PAINT CONDITION SURVEY

Please Note: EPA and HUD have provided a specific definition for the term "deteriorated paint." Deteriorated paint is defined as "any interior or exterior paint or other coating that is peeling, chipping, chalking or cracking, or any paint or coating located on an interior or exterior surface or fixture that is otherwise damaged or separated from the substrate." This definition is most typically associated with surface conditions only. Usage of this term in describing conditions other than those associated with surface coatings are not known to be defined by EPA or HUD.

Continued

INSPECTION REPORT SYNOPSIS (cont)

Identified Deteriorated Paint, Paint Conditions, Lead Content, & Most Apparent Cause of Deterioration:

- None Detected

The remaining paint exhibited no apparent signs of deterioration, as of the date of the Assessment.

INTERIOR DUST SAMPLING:
A total of 10 single surface dust wipe samples were collected (and two blanks) in an effort to help to determine the levels of lead-containing dust on the interior window sills and floors. These samples were collected from areas most likely to be lead-contaminated if lead-in-dust is present. These samples were collected in accordance with the requirements of ASTM Standard E-1728, Standard Practice for Field Collection of Settled Dust Samples Using Wipe Sampling Methods for Lead Determination by Atomic Spectrometry Techniques. EPA, HUD and State of Connecticut regulations define the following as hazardous levels for lead dust in residences: floors – ≥40 mg/ft2 (micrograms per square foot); interior window sills – ≥250 mg/ft2. There is no EPA dust-lead hazard standard for window troughs. Please refer to *Appendix B – Dust Wipe Analytical Results* for the laboratory reports and to *Appendix I – Lead and Lead Safety Information and Resources* for a list of publications and resources addressing lead hazards and their health effects; both are located at the end of this report.

All of the ten dust samples collected were within acceptable levels. A summary list is given below, see attached analysis reports and drawings for details.

Sample #	Date	Location	Surface	Dust Wipe Result (ug/sq ft)	CT-DPH Standard (ug/sq ft)
183-76-1D	8/6/2014	Kitchen, by Back Door	Floor	BDL <12.2	40
183-76-2D	8/6/2014	Living Rm, by Front Door	Floor	BDL <12.2	40
183-76-3D	8/6/2014	Bedroom 3	Floor	BDL <12.2	40
183-76-4D	8/6/2014	Bedroom 2	Floor	BDL <12.2	40
183-76-5D	8/6/2014	Bedroom 1	Floor	26.7	40
183-76-6D	8/6/2014	Kitchen, Side B	Window Sill	189.7	250
183-76-7D	8/6/2014	Living Rm, Side A	Window Sill	67.9	250
183-76-8D	8/6/2014	Bedroom 3, Side D	Window Sill	BDL <30.3	250
183-76-9D	8/6/2014	Bedroom 2, Side C	Window Sill	BDL <26.4	250
183-76-10D	8/6/2014	Bedroom 1, Side C	Window Sill	BDL <30.3	250
183-76-11D	8/6/2014	-	Blank	BDL <12.2	-
183-76-12D	8/6/2014	-	Blank	BDL <12.2	-

SOIL SAMPLING AND LABORATORY INFORMATION: Three (3) soil samples were collected at this residence in accordance with the requirements of ASTM Standard E-1727, Standard Practice for Field Collection of Soil Samples for Lead Determination by Atomic Spectrometry Techniques. None of the samples identified lead concentrations above the levels that EPA, HUD or CT-DPH identifies as hazardous. See the following table for a summary of the soil sampling results. Please refer to *Appendix C – Soil Sample Analytical Data* for the detailed analytical reports.

INSPECTION REPORT SYNOPSIS (cont)

SOIL SAMPLING AND LABORATORY INFORMATION (cont):

Sample #	Date	Location	Surface	Soil Concentration (mg/kg)	CT-DPH Standard (mg/kg)
183-76-1S	8/6/2014	Side A, 2' from house, 6" from front porch	Soil 2" deep	25.2	400
183-76-2S	8/6/2014	Side C, 15' from house, 2' from deck	Soil 2" deep	35.3	400
183-76-3S	8/6/2014	Side D, 2' from house, 6' from side A	Soil 2" deep	63.1	400

HAZARDOUS WASTE EVALUATION

Lead (as defined by OSHA regulations 29 CFR 1926.62) and Lead Based Paint (as defined by USC Title 15 – Chapter 53- Toxic Substance Control) ***was NOT detected*** on surfaces and/or components within the scope of the inspection, the subject renovation project is not subject to hazardous waste evaluation requirements.

RECOMMENDATIONS

No further action is required at this time as Lead Based Paint was not detected within the scope of the inspection, no Lead Based Paint Hazards were identified and you are exempt from evaluating the construction waste as hazardous waste. However, please keep in mind, lead related work must be done according to applicable regulations (OSHA 1926.62 and USC Title 15 – Chapter 53- Toxic Substance Control) with properly trained personnel using proper work practices and procedures including proper disposal of hazardous lead waste (CT DEEP) and proper precautions to avoid contaminating the building and exposing those present to lead dust or fumes. Before cutting or welding and preparation work, any lead-based paint identified above should be handled with proper precautions to avoid contaminating adjacent areas and exposing those present to lead dust or fumes.

Please note that OSHA 29 CFR 1926.62 requires contractors working at the site must be notified of the location of the lead even if it is not to be disturbed so they make safely work around it.

See separate Asbestos Pre-renovation Inspection report and Mold Assessment report for additional details.

If you have any questions or need more information please call me. Thank you for calling on us.

Sincerely,

Dan Sullivan
Vice President, Operations

Appendix A XRF Lead–Based Paint Testing Results

ChemScope, Inc. **LEAD INSPECTION DATA FORM FOR XRF – COVER PAGE** XRF Data Form LI-1 (8/11)

Site Name: Site 003 Date of Inspection: 4/25/2014

Site Address: 153 Twin Brook Road, Hamden, CT CS# 183-76

Customer Name: Diversified Technology Consultants (DTC)

Customer Address: 2321 Whitney Avenue, Suite 301 / Hamden, CT 06518

Work Area: Interior - 1st Floor Kitchen & Living Room Page 1 of 2

Site Description: Single-Family Residential Year of Construction: 1951

Name of Individual Doing Testing: Dan Sullivan CT DPH Lic# 2131

CO-57 Date Source Installed: 11/2/2012 Software version # N/A Serial # 1647

Test #	Clock Time	NIST Calibration Standard	Results QM (mg/CM2)
1	8:28 am	NIST SRM 2573 Red	1.0
2	8:29 am	NIST SRM 2573 Red	1.0
3	8:30 am	NIST SRM 2573 Red	1.0
39	9:36 am	NIST SRM 2573 Red	1.0
40	9:37 am	NIST SRM 2573 Red	1.0
41	9:38 am	NIST SRM 2573 Red	1.0
		NIST SRM 2573 Red	
		NIST SRM 2573 Red	
4	8:31	NIST SRM 2570 White (Blank)	-0.2
42	9:39 am	NIST SRM 2570 White (Blank)	-0.2

Note: each entry represents a single test on the surface indicated.

- Acceptance limits for calibration are 0.7-1.3.
- 1.0 mg/cm² or higher = lead based paint (LBP)
- **All values run under Quick Mode (QM), unless noted otherwise under comments above.**
- **Calibration std SRM 2573 has 1.0 mg/cm² of lead, expiration of std is 7/1/20.**
- **DEF under comments means the surface has defective lead based paint**

INSPECTOR SIGNATURE/Date/REVIEWED BY/Date: Dan Sullivan, 4/29/14, [illegible], 5/12/14

ChemScope, Inc. **LEAD INSPECTION DATA FORM FOR XRF** XRF Data Form LI-1 (8/11)

Site Name: Site 003 Date of Inspection: 4/25/2014

Site Address: 153 Twin Brook Road, Hamden, CT CS#183-76

Work Area: Interior - 1st Floor Kitchen Page 2 of 2

Test # / Side		Int/Ext	Room #	Component	Defective (Y/N)	Color	Substrate	Results QM (mg/CM2)	LPB (Y/N)	
8:35 am 5	D1	INT	Kitchen	wall	Y	beige	Sheetrock	-0.2	N	
6	"	"	"	"	"	"	"	-0.2	N	QC
7	C	"	"	"	Y	"	"	-0.2	N	
8	"	"	"	"	"	"	"	-0.2	N	QC
9	"	"	"	ceiling	Y	"	"	-0.3	N	
10	"	"	"	"	"	"	"	-0.3	N	QC
11	"	"	"	window sill	Y	white	wood	-0.1	N	
12	"	"	"	"	"	"	"	-0.2	N	QC
13	"	"	"	window casing	"	"	"	-0.2	N	
14	"	"	"	"	"	"	"	-0.2	N	QC
15	"	"	"	window apron	"	"	"	-0.4	N	
16	"	"	"	"	"	"	"	-0.1	N	QC
17	"	"	"	window sash	Y	"	"	-0.2	N	
18	"	"	"	"	"	"	"	-0.1	N	QC
19	"	"	"	wind. well	Y	"	"	-0.1	N	
20	"	"	"	"	"	"	"	-0.0	N	QC
21	"	"	"	window frame	Y	"	"	-0.2	N	
22	"	"	"	"	"	"	"	-0.3	N	QC
23	"	"	"	countertop	N	unpainted beige	wood laminate	-0.2	N	
24	"	"	"	"	"	"	"	-0.4	N	QC
25	"	"	"	floor	N	marbled	linoleum	0.1	N	
26	"	"	"	"	"	"	"	-0.1	N	COs
27	"	"	"	cabinet door/3	N	wood stain	wood	-0.4	N	
28	"	"	"	cabinet frame	"	"	"	-0.4	N	
29	A	"	"	baseboard	Y	white	wood	-0.1	N	
30	DB	"	"	door	Y	"	"	-0.1	N	
03 am 31	"	"	"	door casing	Y	"	"	-0.2	N	

Signature: Dan Fuller Date: 4/25/14

ChemScope, Inc. **LEAD INSPECTION DATA FORM FOR XRF** XRF Data Form LI-1 (8/11)

Site Name: Site 003 Date of Inspection: 4/25/2014

Site Address: 153 Twin Brook Road, Hamden, CT CS#183-76

Work Area: Interior - 1ST Floor Living Room Page 3 of 3

Test # / Side		Int/Ext	Room #	Component	Defective (Y/N)	Color	Substrate	Results QM (mg/CM2)	LPB (Y/N)
32	A	Int	Living Rm	Wall	Y	Lt. Beige	Sheetrock	-0.1	N
33	A	"	"	Ceiling	Y	"	"	-0.3	N
34	A	"	"	base board	Y	White	wood	0.0	N
35	"	"	"	window sill	"	"	"	-0.3	N
36	"	"	"	window casing	"	"	"	-0.2	N
37	"	"	"	window sash 3	"	"	white wood	-0.1	N
38	"	"	"	window well	N	"	wood	-0.0	N
39	—	—	—						
40									
41									

Signature: Dan Gallo Date: 4/25/14

EVALUATING THE QUALITY OF XRF:

Site Name: Site 003
Site Address: 153 Twin Brook Road, Hamden, CT

CS# 183-76
Date: 4/25/2014

Location	Original Reading	Retest Reading	Square of Original Reading	Square of Retest Reading
1. Interior - Kitchen - Wall - Side D1	-0.2	-0.2	0.04	0.04
2. Interior - Kitchen - Wall - Side C	-0.2	-0.2	0.04	0.04
3. Interior - Kitchen - Ceiling - Side C	-0.3	-0.3	0.09	0.09
4. Interior - Kitchen - Window Sill - Side C	-0.1	-0.2	0.01	0.04
5. Interior - Kitchen - Window Casing - Side C	-0.2	-0.2	0.04	0.04
6. Interior - Kitchen - Window Apron - Side C	-0.4	-0.1	0.16	0.01
7. Interior - Kitchen - Window Sash - Side C	-0.2	-0.1	0.04	0.01
8. Interior - Kitchen - Window Well - Side C	-0.1	0	0.01	0.00
9. Interior - Kitchen - Window Frame - Side C	-0.2	-0.3	0.04	0.09
10. Interior - Kitchen - Countertop - C	-0.2	-0.4	0.04	0.16
10. Interior - Kitchen - Floor - C	0.1	-0.1	0.01	0.01
Sum of ten squared averages ("C"):			0.52	0.53
		"C" times 0.0072 ("D"):	0.003744	0.00382
		"D" plus 0.032 ("E"):	0.035744	0.035816
		Square root of "E" ("F"):	0.18906	0.189251156
		"F" times 1.645 (Retest Tolerance Limit):	**0.3110**	0.3113
Average of the ten XRF Readings:			-0.18	-0.19
		Absolute difference of the two averages:	**0.0091**	

If the difference is less than the Retest Tolerance Limit, the inspection has passed the retest.

ChemScope, Inc. **LEAD INSPECTION DATA FORM FOR XRF – COVER PAGE** XRF Data Form LI-1 (8/11)

Site Name: Site 003 Date of Inspection: 5/16/2014

Site Address: 153 Twin Brook Road, Hamden, CT CS# 183-76

Customer Name: Diversified Technology Consultants (DTC)

Customer Address: 2321 Whitney Avenue, Suite 301 / Hamden, CT 06518

Work Area: Interior Page 1 of 2

Site Description: Single-Family Residential Year of Construction: 1951

Name of Individual Doing Testing: Dan Sullivan CT DPH Lic# 2131

CO-57 Date Source Installed: 11/2/2012 Software version # N/A Serial # 1647

Test #	Clock Time	NIST Calibration Standard	Results QM (mg/CM2)
1	833 am	NIST SRM 2573 Red	1.0
2	834 am	NIST SRM 2573 Red	1.0
3	835 am	NIST SRM 2573 Red	1.0
17	907 am	NIST SRM 2573 Red	1.0
18	908 am	NIST SRM 2573 Red	1.0
19	909 am	NIST SRM 2573 Red	1.0
		NIST SRM 2573 Red	
		NIST SRM 2573 Red	
4	836 am	NIST SRM 2570 White (Blank)	-0.1
20	910 am	NIST SRM 2570 White (Blank)	-0.3

Note: each entry represents a single test on the surface indicated.

- Acceptance limits for calibration are 0.7-1.3.
- 1.0 mg/cm² or higher = lead based paint (LBP)
- **All values run under Quick Mode (QM), unless noted otherwise under comments above.**
- **Calibration std SRM 2573 has 1.0 mg/cm² of lead, expiration of std is 7/1/20.**
- **DEF under comments means the surface has defective lead based paint**

Reviewed 8/12/14

INSPECTOR SIGNATURE/Date/REVIEWED BY/Date: Dan Sullivan / 5/16/14

ChemScope, Inc. **LEAD INSPECTION DATA FORM FOR XRF** XRF Data Form LI-1 (8/11)

Site Name: Site 003 Date of Inspection: 5/16/2014

Site Address: 153 Twin Brook Road, Hamden, CT CS#183-76

Work Area: 1st Floor & Basement Ceilings Page 2 of 2

	Test # / Side		Int/Ext	Room #	Component	Defective (Y/N)	Color	Substrate	Results QM (mg/CM2)	LPB (Y/N)	
3:40 pm	5	A	Int	Hallway	ceiling	N	Lt. Beige	SR	-0.2	N	
	6	"	"	"	"	"	"	"	-0.2	N	QC
	7	"	"	Bed Rm 1	"	"	"	"	-0.2	N	
	8	"	"	"	"	"	"	"	-0.3	N	QC
	9	C	"	Bed Rm 2	"	Y	White	SR	-0.3	N	
	10	"	"	"	"	"	"	"	-0.2	N	QC
	11	C	"	Bed Rm 3	"	Y	White	SR	-0.2	N	
	12	"	"	"	"	"	"	"	-0.3	N	QC
	13	B	"	Bsmt Stairs	ceiling	Y	beige	SR	-0.3	N	
	14	"	"	"	"	"	"	"	-0.2	N	QC
	15	C	"	Bsmt Family Rm	Ceiling	Y	White	1x1 acoustic tile	-0.2	N	
7:02 pm	16	"	"	"	"	"	"	"	-0.1	N	QC

Signature: Dan Sola Date: 5/16/14

EVALUATING THE QUALITY OF XRF:

Site Name: Site 003 CS# 183-76
Site Address: 153 Twin Brook Road, Hamden, CT Date: 5/16/2014

	Location	Original Reading	Retest Reading	Square of Original Reading	Square of Retest Reading
1.	Interior - Hallway - Ceiling - Side A	-0.2	-0.2	0.04	0.04
2.	Interior - Bedroom 1 - Ceiling - Side A	-0.2	-0.3	0.04	0.09
3.	Interior - Bedroom 2 - Ceiling - Side C	-0.3	-0.2	0.09	0.04
4.	Interior - Bedroom 3 - Ceiling - Side C	-0.2	-0.3	0.04	0.09
5.	Interior - Basement Stairs - Ceiling - Side B	-0.3	-0.2	0.09	0.04
6.	Interior - Basement Family Room - Ceiling - Side C	-0.2	-0.1	0.04	0.01
7.					
8.					
9.					
10.					
10.					
	Sum of six squared averages ("C"):			0.34	0.31
			"C" times 0.0072 ("D"):	0.002448	0.00223
			"D" plus 0.032 ("E"):	0.034448	0.034232
			Square root of "E" ("F"):	0.18560	0.185018918
			"F" times 1.645 (Retest Tolerance Limit):	**0.3053**	0.3044
	Average of the six XRF Readings:			-0.23	-0.22
			Absolute difference of the two averages:	**0.0167**	

If the difference is less than the Retest Tolerance Limit, the inspection has passed the retest.

ChemScope, Inc. **LEAD INSPECTION DATA FORM FOR XRF – COVER PAGE** XRF Data Form LI-1 (8/11)

Site Name: Site 003 Date of Inspection: 8/6/2014

Site Address: 153 Twin Brook Road, Hamden, CT CS# 183-76

Customer Name: Diversified Technology Consultants (DTC)

Customer Address: 2321 Whitney Avenue, Suite 301 / Hamden, CT 06518

Work Area: Throughout Page 1 of 4

Site Description: Single-Family Residential Year of Construction: 1951

Name of Individual Doing Testing: Dan Sullivan CT DPH Lic# 002131

CO-57 Date Source Installed: 11/2/2012 Software version # N/A Serial # 1647

Test #	Clock Time	NIST Calibration Standard	Results QM (mg/CM2)
1	9:08 am	NIST SRM 2573 Red	1.0
2	9:09 am	NIST SRM 2573 Red	1.0
3	9:10 am	NIST SRM 2573 Red	1.0
67	10:01 am	NIST SRM 2573 Red	1.0
68	10:02 am	NIST SRM 2573 Red	1.0
69	10:02 am	NIST SRM 2573 Red	1.0
		NIST SRM 2573 Red	
		NIST SRM 2573 Red	
4	9:11 am	NIST SRM 2570 White (Blank)	-0.1
70	10:02 am	NIST SRM 2570 White (Blank)	-0.3

Note: each entry represents a single test on the surface indicated.

- Acceptance limits for calibration are 0.7-1.3.
- 1.0 mg/cm^2 or higher = lead based paint (LBP)
- **All values run under Quick Mode (QM), unless noted otherwise under comments above.**
- **Calibration std SRM 2573 has 1.0 mg/cm^2 of lead, expiration of std is 7/1/20.**
- **DEF under comments means the surface has defective lead based paint**

INSPECTOR SIGNATURE/Date/REVIEWED BY/Date: Dan Sullivan / 8/6/14 / [signature] / 8-12-14

ChemScope, Inc. **LEAD INSPECTION DATA FORM FOR XRF** XRF Data Form LI-1 (8/11)

Site Name: Site 003 Date of Inspection: 8/ 6 /2014

Site Address: 153 Twin Brook Road, Hamden, CT CS#183-76

Work Area: Interior - 1st Floor Page 2 of 4

Test # / Side	Int/Ext	Room #	Component	Defective (Y/N)	Color	Substrate	Results QM (mg/CM2)	LPB (Y/N)	
5 B1	Int	Living room	wall	Y	beige	SR	-0.2	N	
6 "	"	"	"	"	"	"	-0.4	N	QC
7 C	"	"	"	"	"	"	-0.2	N	
8 "	"	"	"	"	"	"	-0.3	N	QC
9 "	"	"	1 door frame	"	white	wood	-0.4	N	
10 "	"	"	"	"	"	"	-0.4	N	QC
11 C	"	"	baseboard	"	"	"	-0.1	N	
12 "	"	"	"	"	"	"	-0.2	N	QC
13 B2	"	"	windowsill	"	"	"	-0.0	N	
14 "	"	"	"	"	"	"	-0.2	N	QC
15 C	"	"	2 door frame	"	"	metal	-0.2	N	
16 "	"	"	"	"	"	"	-0.3	N	QC
17 A	"	"	door	"	"	wood	-0.2	N	
18 "	"	"	"	"	"	"	-0.2	N	QC
19 "	"	"	door casing	"	"	"	-0.0	N	
20 "	"	"	"	"	"	"	-0.2	N	QC
21 "	"	"	door frame	"	"	"	0.2	N	
22 "	"	"	"	"	"	"	0.2	N	QC
23 B1	"	"	door	"	"	"	-0.2	N	
24 "	"	"	"	"	"	"	-0.2	N	QC
25 "	"	"	door frame	"	"	metal	-0.2	N	
26 B1	"	hall way	rw. 8/6/14 ~~hall way~~ door	Y	"	wood	-0.4	N	
27 C1	"	"	door	"	"	"	-0.4	N	
28 C2	"	"	"	"	beige	"	-0.4	N	
29 D	"	"	"	"	white	"	-0.4	N	
30 A	"	"	door 1	"	"	"	0.0	N	
31 "	"	"	door 1 frame	"	"	metal	-0.2	N	

Signature: Date: 8/6/14

ChemScope, Inc. **LEAD INSPECTION DATA FORM FOR XRF** XRF Data Form LI-1 (8/11)

Site Name: Site 003 Date of Inspection: 8/ 6 /2014

Site Address: 153 Twin Brook Road, Hamden, CT CS#183-76

Work Area: Interior 1ST Flor / Basement Page 3 of 4

Test # / Side	Int/Ext	Room #	Component	Defective (Y/N)	Color	Substrate	Results QM (mg/CM2)	LPB (Y/N)
32 C	Int	bathroom	upper wall	Y	Lt brown	SR	-0.2	N
33 D	"	"	"	"	"	"	-0.0	N
34 "	"	"	ceiling	"	white	"	-0.3	N
35 A	"	"	door	"	wood stain	wood	-0.3	N
36 D	"	bedroom 3	window sill	"	white	wood	-0.4	N
37 "	"	"	" casing	"	"	"	-0.2	N
38 C	"	"	door 2	"	"	"	-0.3	N
39 "	"	"	door 2 frame	"	"	metal	-0.2	N
40 C	"	bedroom 2	window sill	"	"	wood	0.1	N
41 ~~C~~	Cw 8/6/14	"	"	"	"	"	-0.2	N bas
42 D	"	"	"	"	"	"	-0.1	N
43 A	"	"	door	"	"	"	-0.1	N
44 "	"	"	door frame	"	"	metal	-0.2	N
45 C	"	bedroom 1	window sill	"	"	wood	-0.1	N
46 "	"	"	window casing	"	"	"	-0.3	N
47 B	"	"	wall	"	tan	SR	-0.4	N
48 D	"	"	"	"	"	"	-0.4	N
49 "	"	"	door	"	"	wood	0.0	N
50 B	"	basement	stair tread	"	~~off white~~ Cw 8/6/14	"	-0.2	N
51 "	"	"	stair raiser	"	"	"	-0.4	N
52 "	"	"	hand rail	"	red	"	-0.1	N
53 B	"	TV room	floor	"	grey	Conc	-0.4	N
54 ~~A~~	Cw 8/6/14	"	wall	"	white	wood	-0.2	N
55 C	"	~~bedroom~~ laundry room	wall	"	green	Conc	-0.0	N
56 D	"	"	"	"	"	"	0.0	N
57 C	"	"	door	"	white	wood	-0.0	N
58 "	"	"	door frame	"	green	"	-0.0	N

Signature: Date: 8/6/14

ChemScope, Inc. **LEAD INSPECTION DATA FORM FOR XRF** XRF Data Form LI-1 (8/11)

Site Name: Site 003 Date of Inspection: 8/ 6 /2014

Site Address: 153 Twin Brook Road, Hamden, CT CS#183-76

Work Area: Exterior Page 4 of 4

Test # / Side		Int/Ext	Room #	Component	Defective (Y/N)	Color	Substrate	Results QM (mg/CM2)	LPB (Y/N)
59	A	Ext	Liv Rm	door	Y	white	wood	0.5	N
60	A	"	"	stair tread	"	gray	conc	-0.1	N
61	A	"	"	foundation wall	"	off white	conc	-0.2	N
62	C	"	Bsmt	"	"	white	"	-0.2	N
63	"	"	"	blco door	"	gray	metal	-0.3	N
64	"	"	"	" frame	"	"	"	-0.2	N
65	"	"	"	" Curb	"	"	Conc	-0.3	N
66	D	"	"	basement window	"	"	metal	-0.3	N
~~67~~		3/6/14							

Signature: Dan Sch Date: 8/16/14

EVALUATING THE QUALITY OF XRF:

Site Name: Site 003 CS# 183-76
Site Address: 153 Twin Brook Road, Hamden, CT Date: 8/6/2014

Location	Original Reading	Retest Reading	Square of Original Reading	Square of Retest Reading
1. Interior - Living Room - Wall - Side B	-0.2	-0.4	0.04	0.16
2. Interior - Living Room - Wall - Side C	-0.2	-0.3	0.04	0.09
3. Interior - Living Room - 1 Door Frame - Side C	-0.4	-0.4	0.16	0.16
4. Interior - Living Room - Baseboard - Side C	-0.1	-0.2	0.01	0.04
5. Interior - Living Room - Window Sill - Side B2	0.0	-0.2	0.00	0.04
6. Interior - Living Room - 2 Door Frame - Side C	-0.2	-0.3	0.04	0.09
7. Interior - Living Room - Door - Side A	-0.2	-0.2	0.04	0.04
8. Interior - Living Room - Door Casing - Side A	0	-0.2	0.00	0.04
9. Interior - Living Room - Door Frame - Side A	0.2	0.2	0.04	0.04
10. Interior - Living Room - Door - Side B1	-0.2	-0.2	0.04	0.04
Sum of ten squared averages ("C"):			0.41	0.74
"C" times 0.0072 ("D"):			0.002952	0.00533
"D" plus 0.032 ("E"):			0.034952	0.037328
Square root of "E" ("F"):			0.18695	0.193204555
"F" times 1.645 (Retest Tolerance Limit):			**0.3075**	0.3178
Average of the ten XRF Readings:			-0.13	-0.22
Absolute difference of the two averages:			**0.0900**	

If the difference is less than the Retest Tolerance Limit, the inspection has passed the retest.

Appendix B Lead in Dust and Soil Sample Analysis Reports

ChemScope *INDUSTRIAL HYGIENE • ENVIRONMENTAL CHEMISTRY*
15 Moulthrop Street, North Haven, CT 06473-3686 • Phone (203) 865-5605 • Fax (203) 498-1610

Diversified Technology Consultants
2321 Whitney Avenue, Suite 301
Hamden CT 06518

Application #2072
8/11/2014
CS# 183-76

LEAD ANALYSIS BY ATOMIC ABSORPTION

Lead dust wipe and soil samples from Site 003, 153 Twin Brook Road, Hamden CT, collected by ChemScope, Inc., on 8/6/2014:

See attached chain of custody and EAS Analytical Services, Inc., reports for sample descriptions and analytical data; and applicable standards on reverse side of this page.

*NOTE: The EAS Analytical Services, Inc. report provides the lead soil concentration in mg/kg which is equivalent to ppm (parts per million).

Suzanne Cristante or
Laboratory Director
SC

Izabela Kremens or
Quality Manager
IK

Ronald D. Arena
President
RDA

Gina I2\C\My Documents\lead100-present.doc

LEAD STANDARDS AND GUIDELINES

(Revised 4/2013)

The following are some existing known standards and guidelines as they relate to lab analysis for lead by AAS. ChemScope assumes no liability for the use of these data. All values are expressed as pure lead, Pb.

1. *Lead in Dust Standards: Connecticut DPH, EPA & HUD:*

   Dust-Wipe Re-Occupancy Testing:
   Floors: 40 micrograms/sq ft
   Sills: 250 micrograms/sq ft
   Window Wells: 400 micrograms/sq ft

   Toxic Level of lead in dry paint: 0.5%

   **NOTE: City of Stamford has a stricter standard of .06%*

2. *For Air Samples: OSHA PEL (Permissible Exposure Limit) is 50 micrograms/cubic meter and the AL (Action Level) is 30 micrograms/cubic meter.*

3. *For Soil: 400 PPM is considered contaminated.*

   State regulations (CT DEEP RCSA 22a-133K) require lead-contaminated soil to be cleaned up to a concentration of 500 ppm in residential areas and 1,000 ppm in industrial and commercial areas. But in practice the Department of [Energy and] Environmental Protection (DEEP) and state and local health departments apply a 400 ppm standard in residential areas. DEEP has begun the process of adopting the 400 ppm standard in regulation.
   OLR Research Report, October 11, 2006, 2006-R-0596

4. *For any material to be disposed of: the DEP and EPA Standard for TCLP lead is 5 milligrams/liter. In addition, other substances besides lead may need to be tested which are not in the scope of this test report.*

5. *Consumer Product Safety Commission: Lead in paint for sale 0.06%.*

6. *For Drinking Water Samples (First Draw and Fully Flushed samples):*

   State of Connecticut Action Level: 0.015 mg/l
   EPA Action Level: 15 ppb

   NOTE: .015 mg/l = 15 ppb

Eastern Analytical Services, Inc.

Wipe Sample Report

RE: CPN 183-76 - Diversified Technology Consultants (DTC) - Site 003 - 153 Twin Brook Road - Hamden, CT

Date Collected: 08/06/2014
Collected By: Dan Sullivan
Date Received: 08/07/2014
Date Analyzed: 08/07/2014
Analyzed By: Everton Byron Barrett
Signature:
Analyte: Pb Dust
Analytical Method: EPA 3050B/7000B
NYS Lab Number: 10851

Client: Chem Scope, Inc.
15 Moulthrop Street
North Haven, CT 06473

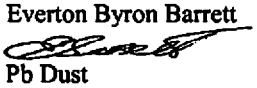
Sample ID# / Lab ID#	Sample Location	Sample Notes	Concentration
183-76-1D 2305013	Kitchen - Floor	Dust Wipe - 12" x 12" Area	BDL < 12.2 µg/ft²
183-76-2D 2305014	Living Room - Floor	Dust Wipe - 12" x 12" Area	BDL < 12.2 µg/ft²
183-76-3D 2305015	Bedroom 3 - Floor	Dust Wipe - 12" x 12" Area	BDL < 12.2 µg/ft²
183-76-4D 2305016	Bedroom 2 - Floor	Dust Wipe - 12" x 12" Area	BDL < 12.2 µg/ft²
183-76-5D 2305017	Bedroom 1 - Floor	Dust Wipe - 12" x 12" Area	26.7 µg/ft²
183-76-6D 2305018	kitchen - Window Sill	Dust Wipe - 2.15" x 31" Area	189.7 µg/ft²
183-76-7D 2305019	Living Room - Window Sill	Dust Wipe - 2.15" x 35" Area	67.9 µg/ft²
183-76-8D 2305020	Bedroom 3 - Window Sill	Dust Wipe - 2.15" x 27" Area	BDL < 30.3 µg/ft²
183-76-9D 2305021	Bedroom 2 - Window Sill	Dust Wipe - 2.15" x 31" Area	BDL < 26.4 µg/ft²

BDL = Below Detectable Limits Reporting Limit = 0.3 ppm
Liability Limited to Cost of Analysis
Results Applicable to Those Items Tested Results are Not Blank Corrected All QC within Control Limits Unless Otherwise Indicated
AIHA Accreditation No. 100263 Rhode Island DOH No. AAL-072T3 Massachusetts DOL No. A A 000072 Connecticut DOH No. PH-0622 Maine DEP No. LA-024 Vermont DOH No. AAS-2095

Eastern Analytical Services, Inc.

Wipe Sample Report

RE: CPN 183-76 - Diversified Technology Consultants (DTC) - Site 003 - 153 Twin Brook Road - Hamden, CT

Date Collected: 08/06/2014
Collected By: Dan Sullivan
Date Received: 08/07/2014
Date Analyzed: 08/07/2014
Analyzed By: Everton Byron Barrett
Signature: 
Analyte: Pb Dust
Analytical Method: EPA 3050B/7000B
NYS Lab Number: 10851

Client: Chem Scope, Inc.
15 Moulthrop Street
North Haven, CT 06473

Sample ID# / Lab ID#	Sample Location	Sample Notes	Concentration
183-76-10D 2305022	Bedroom 1 - Window Sill	Dust Wipe - 2.15" x 27" Area	BDL < 30.3 µg/ft²
183-76-11D 2305023	Not Applicable	Field Blank	BDL < 12.2 µg
183-76-12D 2305024	Not Applicable	Field Blank	BDL < 12.2 µg

BDL = Below Detectable Limits Reporting Limit = 0.3 ppm
Liability Limited to Cost of Analysis
Results Applicable to Those Items Tested Results are Not Blank Corrected All QC within Control Limits Unless Otherwise Indicated
AIHA Accreditation No. 100263 Rhode Island DOH No. AAL-072T3 Massachusetts DOL No. A A 000072 Connecticut DOH No. PH-0622 Maine DEP No. LA-024 Vermont DOH No. AAS-2095

Eastern Analytical Services, Inc.

Bulk Sample Report

RE: CPN 183-76 - Diversified Technology Consultants (DTC) - Site 003 - 153 Twin Brook Road - Hamden, CT

Date Collected: 08/06/2014
Collected By: Dan Sullivan
Date Received: 08/07/2014
Date Analyzed: 08/07/2014
Analyzed By: Everton Byron Barrett
Signature:
Analyte: Pb Bulk
Analytical Method: EPA 3050B/7000B
NYS Lab Number: 10851

Client: Chem Scope, Inc.
15 Moulthrop Street
North Haven, CT 06473

Sample ID# / Lab ID#	Sample Location	Sample Notes	Concentration
183-76-1S 2305008	Side A - 2' from Side A, 6" from Front Porch	Soil - 2" Deep Grab	25.2 mg/kg 0.01 %
183-76-2S 2305009	Side C - 15' from Side C, 2' from Back Porch	Soil - 2" Deep Grab	35.3 mg/kg 0.01 %
183-76-3S 2305010	Side D - 2' from Side D, 6' from Side A	Soil - 2" Deep Grab	63.1 mg/kg 0.01 %

BDL = Below Detectable Limits Reporting Limit = 0.3 ppm
Liability Limited to Cost of Analysis
Results Applicable to Those Items Tested Results are Not Blank Corrected All QC within Control Limits Unless Otherwise Indicated Soil Samples Reported on Dry Weight Basis - Paint Samples Reported as Received
AIHA Accreditation No. 100263 Rhode Island DOH No. AAL-072T3 Massachusetts DOL No. A A 000072 Connecticut DOH No. PH-0622 Maine DEP No. LA-024 Vermont DOH No. AAS-2095

PO# 1305

Chem Scope, Inc.
15 Moulthrop Street, North Haven CT 06473
203-865-5605

Form FL-4A Rev 11/12/13
(Issued By SC)

CHAIN OF CUSTODY

Emailed___
Faxed___
Called___
Logged ✓

Site 003

Sample Source: 153 Twin Brook Road, Hamden, CT CS Job CS# 183-76

Sampled by: Dan Fuller Date Sampled: 8/6/14 Customer Name: Diversified Technology Consultants (DTC) -

CS Sample#	~~Client Sample#~~ Location 8/6	Sample Description	Comments (sq ft)
183-76-1D	Kitchen	Floor - 12"x12" on linoleum	1.0 sq ft
183-76-2D	Living room	" Wood	"
183-76-3D	bedroom 3	" "	"
183-76-4D	bedroom #2 3rd floor	" "	"
183-76-5D	bedroom #1	" "	"
183-76-6D	Kitchen	window sill 2.15x31 on wood	0.46 sq ft
183-76-7D	Living room	" 2.15x35 on wood	0.52 sq ft
183-76-8D	bedroom3	" 2.15x27 "	0.40 sq ft
183-76-9D	bedroom2	" 2.15x31 "	0.46 sq ft
183-76-10D	bedroom1	" 2.15x27 "	0.40 sq ft
183-76-11D	—	Blank	—
183-76-12D	—	Blank	—
183-76-1S	Side A	2' from side A, 6" from front porch	2" deep grab
183-76-2S	Side C	15' from side C, 2' from back porch	2" deep grab
183-76-3S	Side D	2' from side D, 6' from side A	2" deep grab

Lead in Dust (ug/ft²)

Lead in Soil (ppm)

Sample Turnaround: 48 hr

Analysis Requested(if variable, use comment column) Lead in Dust / Lead in Soil

Check if you want sample returned ____ (sampled will be disposed of after 30 days).

Relinquished by Dan Fuller Date 8/6/14 Time _____ Received by _____
Relinquished by _____ Date _____ Time _____ Received by _____

Other Special Instructions: _____

Result Transmittal Instructions (for Chem Scope to transmit): Tell DS for Report

FOR CHEM SCOPE, INC. TO FILL OUT IF SAMPLES ARE GOING TO OUTSIDE LAB:

Name of Laboratory: EAS Method of Transportation to Laboratory: Fed Ex

Result Transmittal Instructions (for outside Lab to Chem Scope, Inc): ***PLEASE FAX RESULTS***

The person submitting samples is responsible for obtaining true and representative samples, for complying with applicable regulations and for the use of the data obtained from the analysis. For example, many states have licensing and laboratory approval requirements. Please contact the individual states if you have any questions regarding specific sampling or approval requirements. For Connecticut sites, we have licensed inspectors available to collect client samples and to perform building inspections.

Dear Laboratory Customer or Potential Customer,

New laboratory accreditation standards require us to provide our clients information about our services to make sure that your requirements for testing are adequately defined, documented and understood. The following is for your information. Please call us if you have any questions or comments.

Type of Samples:
/_/ PCM cassettes are routinely run by NIOSH Method 7400.
/ / Bulk materials are run by EPA Method: #600/R-93/116.

Air Samples: NIOSH 7400 Method counts all fibers. This method may be used for personal air samples and for finals. Two field blanks must be submitted for each set of samples. In the unlikely event that there is to be any deviation from the standard test, you will be consulted by phone before the work begins. Those clients who have not had NIOSH 582 or AHERA asbestos training courses (either supervisor or project monitor) should consult with the lab director for more information. The test parameters are further explained in the analytical report.

Bulk materials: sampled are analyzed by the latest EPA Method: (#600/R-93/116) which uses polarized light microscopy (PLM). When asbestos is detected and the amount is estimated to be <10%, we automatically point count the samples. When there are interfering substances present, we may use ashing, acid washing or other procedures described in the method to handle the interference. Those clients who have not had AHERA asbestos training courses (either inspector, supervisor or project designer) should consult with the lab director for more information. The test parameters are further explained in the analytical report.

All Samples must be clearly labeled with source name and identification number or sufficient information from the client to make this sample uniquely identified. (We will then add our notebook #, page # (batch) and unique number within the batch.) Samples must be in a clean, air tight package such as a zip loc bag. Appropriate completed paperwork must accompany the sample. Bulk and air samples may not be submitted in the same package.

As soon as available bench top results will be faxed to you and reports will then be mailed. We will retain air samples for at least three months and bulk samples for 6 months unless you advise us otherwise.

You are welcome to visit the laboratory at any time to discuss the work, monitor the work or verify our testing services. We appreciate your business and encourage any feedback regarding improving our services or our quality system. Please take a minute to complete the following survey and mail/fax it to ChemScope, Inc.

Customer Service Survey

To help us improve our services give your opinions to the following:

1- The printed laboratory report was complete and easy to understand. ☐ YES ☐ NO
If no, please explain _____.

2- The turn around time for results met your expectations/needs. ☐ YES ☐ NO
If no, please explain _____.

3- How likely are you to recommend ChemScope Inc. to someone?
☐ Excellent ☐ Very Good ☐ Good ☐ Fair ☐ Poor

4- How likely are you to return to ChemScope in the future if the need arises?
☐ Excellent ☐ Very Good ☐ Good ☐ Fair ☐ Poor

5. On a scale of 1 to 5 where 1 represents "Satisfied" and 5 represents "Dissatisfied", how would you rate your level of overall satisfaction.
☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

6- Please add any additional comments or suggestions that would be helpful when you use our services:
_____

Name _____ Company_____

Address_____ Telephone/e-mail_____

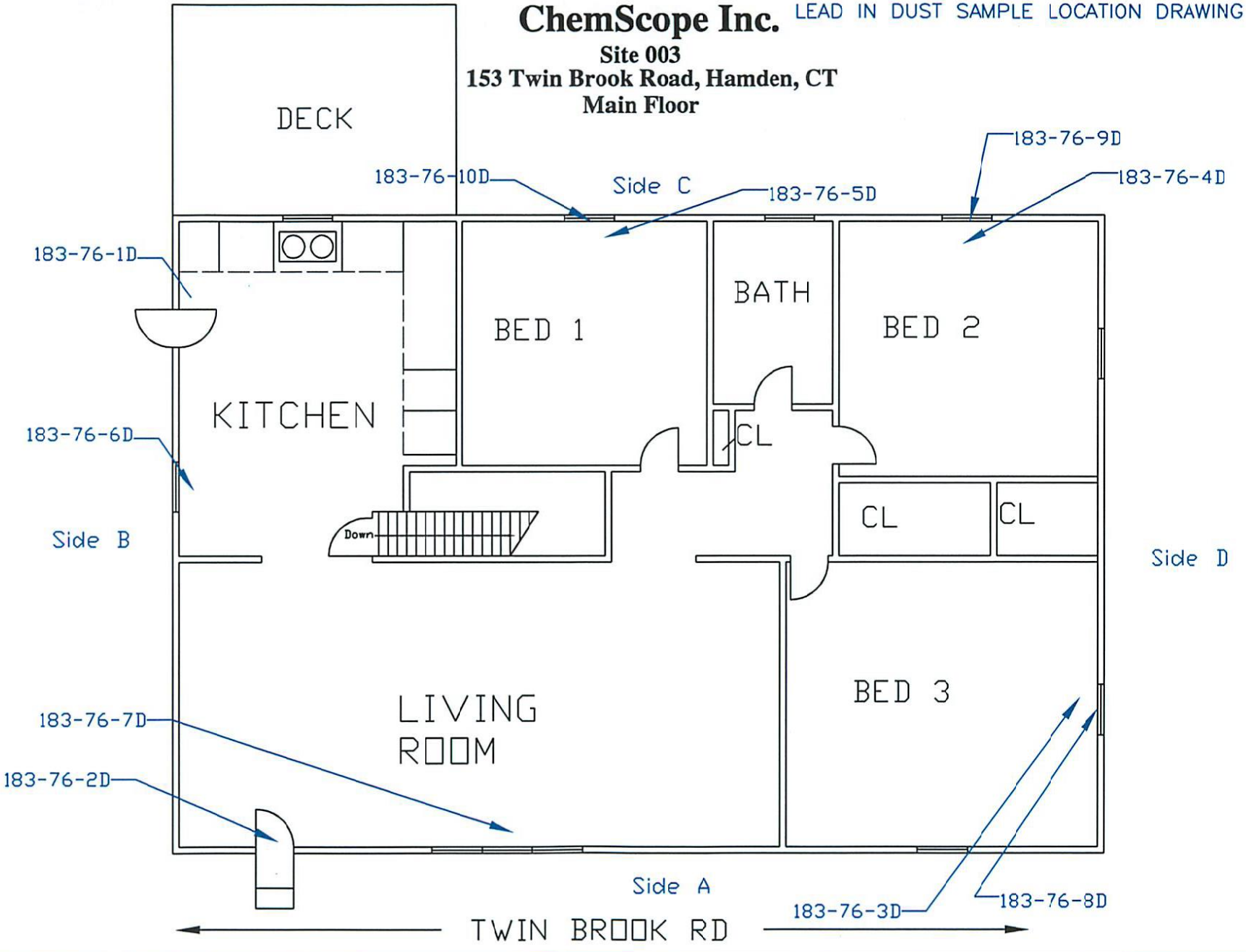
Can we contact you regarding this survey? ☐ YES ☐ NO

Appendix C Sample Location Drawings

ChemScope Inc.

LEAD IN DUST SAMPLE LOCATION DRAWING

Site 003
153 Twin Brook Road, Hamden, CT
Main Floor



LEGEND OF SYMBOLS

#D	Lead in Dust Sample Location

NOTATIONS

DRAWN BY:
LEIGH HONOROF

ChemScope Inc.

SHEET TITLE:

Asbestos & Lead Inspection

153 TWIN BROOK RD HAMDEN, CT

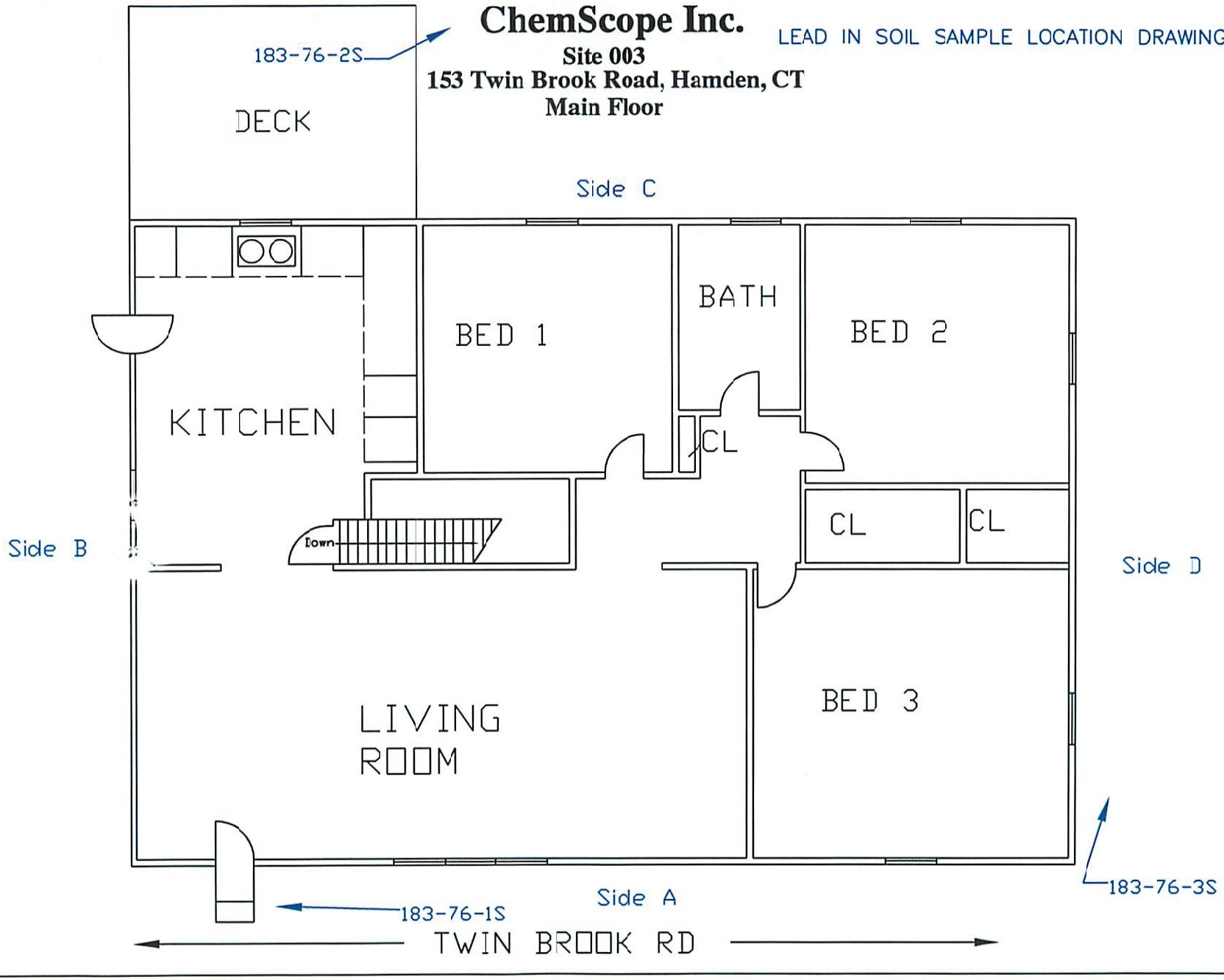
MAIN FLOOR

CHEMSCOPE NUMBER:	DRAWING NUMBER
CS# 183-76	1 LD
SCALE: NOT TO SCALE	
DATE: 5-29-14	

ChemScope Inc.

Site 003
153 Twin Brook Road, Hamden, CT
Main Floor

LEAD IN SOIL SAMPLE LOCATION DRAWING



LEGEND OF SYMBOLS

#S	Lead in Soil Sample Location

NOTATIONS

DRAWN BY:
LEIGH HONOROF

ChemScope Inc.

SHEET TITLE:

Asbestos & Lead Inspection

153 TWIN BROOK RD HAMDEN, CT

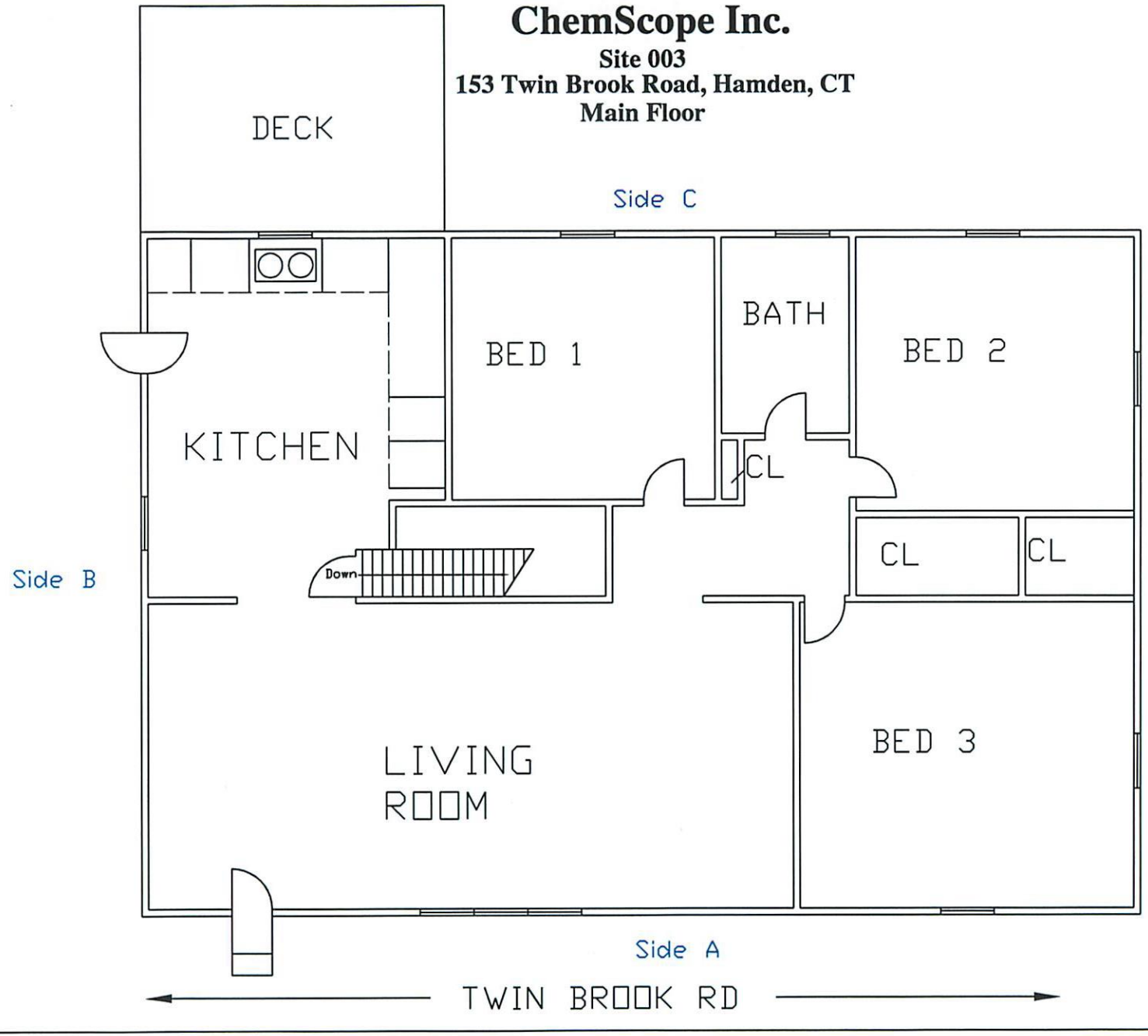
MAIN FLOOR

CHEMSCOPE NUMBER:	DRAWING NUMBER
CS# 183-76	1 LS
SCALE: NOT TO SCALE	
DATE: 5-29-14	

Appendix D Site Reference Drawings

ChemScope Inc.

Site 003
153 Twin Brook Road, Hamden, CT
Main Floor



LEGEND OF SYMBOLS

NOTATIONS

DRAWN BY:
LEIGH HONOROF

ChemScope Inc.

SHEET TITLE:

Asbestos & Lead Inspection

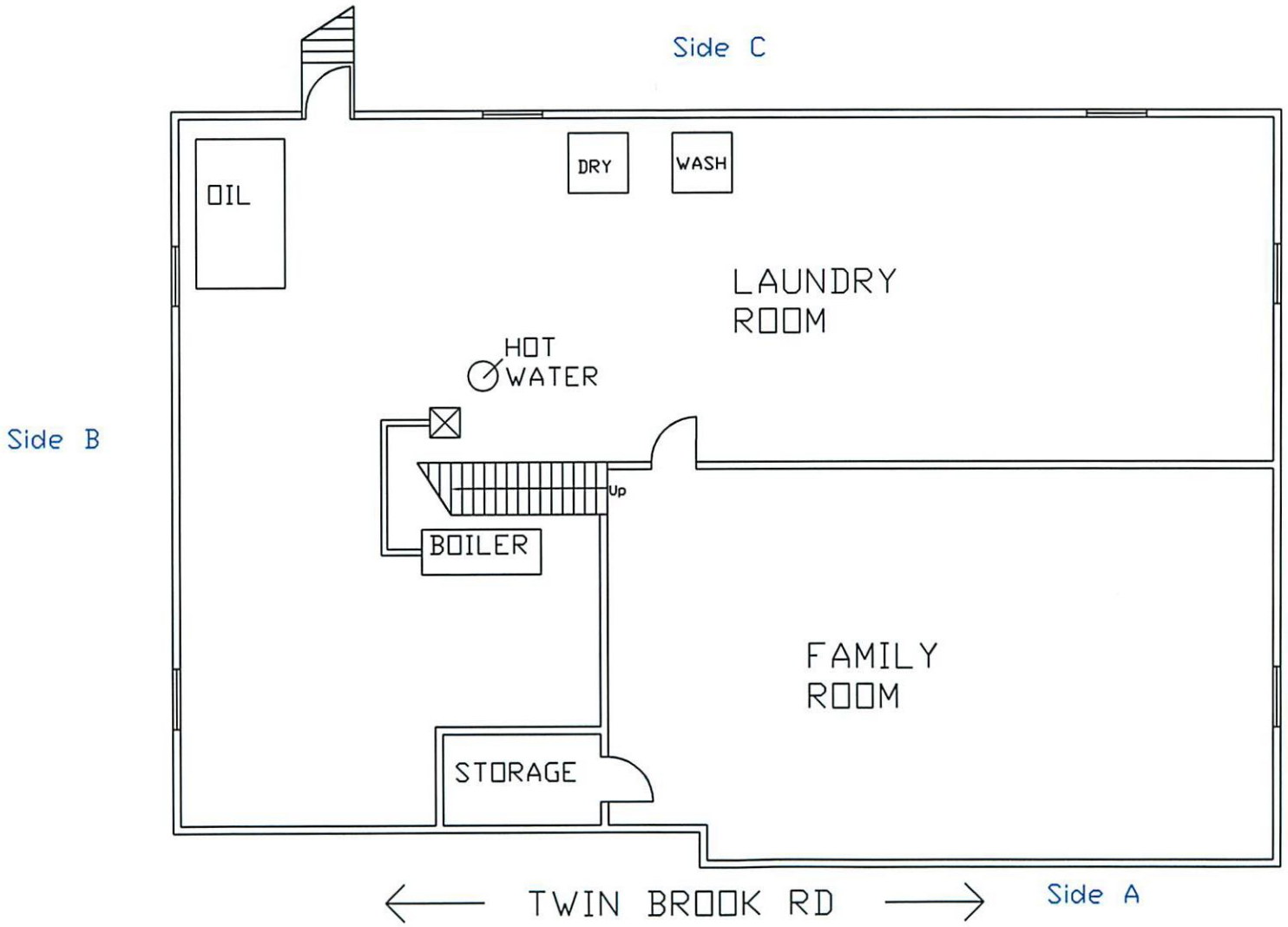
153 TWIN BROOK RD HAMDEN, CT

MAIN FLOOR

CHEMSCOPE NUMBER:	DRAWING NUMBER
CS# 183-76	1
SCALE: NOT TO SCALE	
DATE: 5-29-14	

ChemScope Inc.

Site 003
153 Twin Brook Road, Hamden, CT
Basement
CS# 183-76, 5-16-14



LEGEND OF SYMBOLS

NOTATIONS

DRAWN BY:
LEIGH HONOROF

ChemScope Inc.

SHEET TITLE:

ASBESTOS, LEAD & MOLD INSPECTION

153 TWIN BROOK RD HAMDEN, CT

BASEMENT

CHEMSCOPE NUMBER:	DRAWING NUMBER
CS# 183-76	2
SCALE: NOT TO SCALE	
DATE: 5-16-14	

Appendix E Copy of Risk Assessor's License/Certification

STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH

PURSUANT TO THE PROVISIONS OF THE GENERAL STATUTES OF CONNECTICUT

THE INDIVIDUAL NAMED BELOW IS CERTIFIED
BY THIS DEPARTMENT AS A

LEAD INSPECTOR RISK ASSESSOR

CERTIFICATION NO.
002131
CURRENT THROUGH
04/30/15
VALIDATION NO.
03-790779

DANIEL P. SULLIVAN

SIGNATURE

COMMISSIONER

CERT# L-600 - 763

CHEMSCOPE TRAINING DIVISION

LEAD INSPECTOR/RISK ASSESSOR REFRESHER

8HOUR TRAINING CERTIFICATE

Daniel P. Sullivan

15 Moulthrop Street , North Haven CT

Has attended an 8 hour course on the subject discipline on

11/08/2013 and has passed a written and hands on skills examination.

The above individual has successfully completed the above training course approved in accordance with the Department of Public Health Standards established pursuant to Section 20-477 of the Connecticut General Statutes.

Course syllabus includes all required topics of State of Connecticut DPH and EPA.

Examination Date: 11/08/2013

Expiration Date: 11/08/2014

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (U.S.C. 1001 and 15 U.S.C. 2615), I certify that this training complies with all applicable requirements of Title IV of TSCA, 40 CFR part 745 and any other applicable Federal, State, or local requirements.

Ronald D. Arena or Brian Santos
Training Director Training Manager

Chem Scope, Inc.
15 Moulthrop Street
North Haven CT 06473
(203) 865-5605

Appendix F Copy of Firm's Lead Activity License/Certification

STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH

PURSUANT TO THE PROVISIONS OF THE GENERAL STATUTES OF CONNECTICUT

LEAD CONSULTANT CONTRACTOR

CHEMSCOPE INC

000164

07/31/15

03-847539

SIGNATURE

Connecticut Department of
Energy & Environmental Protection
79 Elm Street
Hartford, CT 06106-5127
www.ct.gov/deep

CHEM SCOPE, INC.

15 MOULTHROP STREET

NORTH HAVEN, CT 06473

12/30/2013

Dear Registrant:

Enclosed is a Certificate of Use for the Radioactive Materials and Industrial X-Ray Device Registration submitted by your facility to the department.

This certificate will serve two purposes. First, this is a way for us to acknowledge to you that your registration has been processed. Second, it is a way for our inspection staff to know that you have the appropriate registration for your radioactive materials and equipment.

The Radioactive Materials and Industrial X-Ray Device Registration must be renewed each year. Notification will be sent to you in the month of November prior to the expiration of this registration to renew your registration.

When corresponding with our office regarding your registration please use the "Application No." indicated on the certificate. This number is unique to your facility and its location.

If you have any questions regarding the Radioactive Materials and Industrial X-Ray Device Registration please feel free to call the Radiation Division at 860-424-3029.

Enclosure

Connecticut Department of
Energy & Environmental Protection
79 Elm Street
Hartford, CT 06106-5127
www.ct.gov/deep

Certificate of Use

Issued To

CHEM SCOPE, INC.

For

Radioactive Material and Industrial X-Ray Device Registration

Daniel C. Esty
Commissioner

Site Located at:
15 Moulthrop St,
North Haven, CT 06473
Reference: 0808-2014

Application No: 201306468
Issue Date: 12/24/2013
Expiration Date: 12/31/2014

Appendix G Copy of XRF Training Certificate and XRF Performance Characteristics Sheet

Certificate of Achievement

This is to certify that

Daniel P. Sullivan
of Chem Scope

on the 2nd day of December 1994 successfully completed the factory training for

RMD's LPA-1 Lead Paint Inspection System

including, but not limited to, the topics of Radiation Safety
and the Proper Use of the Instrument.

Jacob Paster, Vice-President of RMD
44 Hunt St., Watertown, Massachusetts

Performance Characteristic Sheet

EFFECTIVE DATE: **December 1, 2006** **EDITION NO.: 5**

MANUFACTURER AND MODEL:

Make: ***Radiation Monitoring Devices***
Model: ***LPA-1***
Source: ^{57}Co
Note: This sheet supersedes all previous sheets for the XRF instrument of the make, model, and source shown above ***for instruments sold or serviced after June 26, 1995. For other instruments, see prior editions.***

FIELD OPERATION GUIDANCE

OPERATING PARAMETERS:

Quick mode or 30-second equivalent standard (Time Corrected) mode readings.

XRF CALIBRATION CHECK LIMITS:

0.7 to 1.3 mg/cm^2 (inclusive)

SUBSTRATE CORRECTION:

For XRF results below 4.0 mg/cm^2, substrate correction is recommended for:

Metal using 30-second equivalent standard (Time Corrected) mode readings.
None using quick mode readings.

Substrate correction is not needed for:

Brick, Concrete, Drywall, Plaster, and Wood using 30-second equivalent standard (Time Corrected) mode readings
Brick, Concrete, Drywall, Metal, Plaster, and Wood using quick mode readings

THRESHOLDS:

30-SECOND EQUIVALENT STANDARD MODE READING DESCRIPTION	SUBSTRATE	THRESHOLD (mg/cm^2)
Results corrected for substrate bias on metal substrate only	Brick	1.0
	Concrete	1.0
	Drywall	1.0
	Metal	0.9
	Plaster	1.0
	Wood	1.0

QUICK MODE READING DESCRIPTION	SUBSTRATE	THRESHOLD (mg/cm^2)
Readings not corrected for substrate bias on any substrate	Brick	1.0
	Concrete	1.0
	Drywall	1.0
	Metal	1.0
	Plaster	1.0
	Wood	1.0

BACKGROUND INFORMATION

EVALUATION DATA SOURCE AND DATE:

This sheet is supplemental information to be used in conjunction with Chapter 7 of the HUD *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing* ("HUD Guidelines"). Performance parameters shown on this sheet are calculated from the EPA/HUD evaluation using archived building components. Testing was conducted on approximately 150 test locations in July 1995. The instrument that performed testing in September had a new source installed in June 1995 with 12 mCi initial strength.

OPERATING PARAMETERS:

Performance parameters shown in this sheet are applicable only when properly operating the instrument using the manufacturer's instructions and procedures described in Chapter 7 of the HUD Guidelines.

XRF CALIBRATION CHECK:

The calibration of the XRF instrument should be checked using the paint film nearest 1.0 mg/cm^2 in the NIST Standard Reference Material (SRM) used (e.g., for NIST SRM 2579, use the 1.02 mg/cm^2 film).

If readings are outside the acceptable calibration check range, follow the manufacturer's instructions to bring the instruments into control before XRF testing proceeds.

SUBSTRATE CORRECTION VALUE COMPUTATION :

Chapter 7 of the HUD Guidelines provides guidance on correcting XRF results for substrate bias. Supplemental guidance for using the paint film nearest 1.0 mg/cm^2 for substrate correction is provided:

XRF results are corrected for substrate bias by subtracting from each XRF result a correction value determined separately in each house for single-family housing or in each development for multifamily housing, for each substrate. The correction value is an average of XRF readings taken over the NIST SRM paint film nearest to 1.0 mg/cm^2 at test locations that have been scraped bare of their paint covering. Compute the correction values as follows:

Using the same XRF instrument, take three readings on a bare substrate area covered with the NIST SRM paint film nearest 1 mg/cm^2. Repeat this procedure by taking three more readings on a second bare substrate area of the same substrate covered with the NIST SRM.

Compute the correction value for each substrate type where XRF readings indicate substrate correction is needed by computing the average of all six readings as shown below.

For each substrate type (the 1.02 mg/cm^2 NIST SRM is shown in this example; use the actual lead loading of the NIST SRM used for substrate correction):

$$\text{Correction value} = (1^{st} + 2^{nd} + 3^{rd} + 4^{th} + 5^{th} + 6^{th}\ \textit{Reading}) / 6 - 1.02\ \text{mg/cm}^2$$

Repeat this procedure for each substrate requiring substrate correction in the house or housing development.

EVALUATING THE QUALITY OF XRF TESTING:

Randomly select ten testing combinations for retesting from each house or from two randomly selected units in multifamily housing. Use either the Quick Mode or 30-second equivalent standard (Time Corrected) Mode readings.

Conduct XRF re-testing at the ten testing combinations selected for retesting.

Determine if the XRF testing in the units or house passed or failed the test by applying the steps below.

Compute the Retest Tolerance Limit by the following steps:

Determine XRF results for the original and retest XRF readings. Do not correct the original or retest results for substrate bias. In single-family and multi-family housing, a result is defined as a single reading. Therefore, there will be ten original and ten retest XRF results for each house or for the two selected units.

Calculate the average of the original XRF result and retest XRF result for each testing combination.

Square the average for each testing combination.

Add the ten squared averages together. Call this quantity C.

Multiply the number C by 0.0072. Call this quantity D.

Add the number 0.032 to D. Call this quantity E.

Take the square root of E. Call this quantity F.

Multiply F by 1.645. The result is the Retest Tolerance Limit.

Compute the average of all ten original XRF results.

Compute the average of all ten re-test XRF results.

Find the absolute difference of the two averages.

If the difference is less than the Retest Tolerance Limit, the inspection has passed the retest. If the difference of the overall averages equals or exceeds the Retest Tolerance Limit, this procedure should be repeated with ten new testing combinations. If the difference of the overall averages is equal to or greater than the Retest Tolerance Limit a second time, then the inspection should be considered deficient.

Use of this procedure is estimated to produce a spurious result approximately 1% of the time. That is, results of this procedure will call for further examination when no examination is warranted in approximately 1 out of 100 dwelling units tested.

BIAS AND PRECISION:

Do not use these bias and precision data to correct for substrate bias. These bias and precision data were computed without substrate correction from samples with reported laboratory results less than 4.0 mg/cm^2 lead. The data which were used to determine the bias and precision estimates given in the table below have the following properties. During the July 1995 testing, there were 15 test locations with a laboratory-reported result equal to or greater than 4.0 mg/cm^2 lead. Of these, one 30-second standard mode reading was less than 1.0 mg/cm^2 and none of the quick mode readings were less than 1.0 mg/cm^2. The instrument that tested in July is representative of instruments sold or serviced after June 26, 1995. These data are for illustrative purposes only. Actual bias must be determined on the site. Results provided above already account for bias and precision. Bias and precision ranges are provided to show the variability found between machines of the same model.

30-SECOND STANDARD MODE READING MEASURED AT	SUBSTRATE	BIAS (mg/cm^2)	PRECISION* (mg/cm^2)
0.0 mg/cm^2	Brick	0.0	0.1
	Concrete	0.0	0.1
	Drywall	0.1	0.1
	Metal	0.3	0.1
	Plaster	0.1	0.1
	Wood	0.0	0.1
0.5 mg/cm^2	Brick	0.0	0.2
	Concrete	0.0	0.2
	Drywall	0.0	0.2
	Metal	0.2	0.2
	Plaster	0.0	0.2
	Wood	0.0	0.2
1.0 mg/cm^2	Brick	0.0	0.3
	Concrete	0.0	0.3
	Drywall	0.0	0.3
	Metal	0.2	0.3
	Plaster	0.0	0.3
	Wood	0.0	0.3
2.0 mg/cm^2	Brick	-0.1	0.4
	Concrete	-0.1	0.4
	Drywall	-0.1	0.4
	Metal	0.1	0.4
	Plaster	-0.1	0.4
	Wood	-0.1	0.4

*Precision at 1 standard deviation.

CLASSIFICATION RESULTS:

XRF results are classified as positive if they are greater than the upper boundary of the inconclusive range, and negative if they are less than the lower boundary of the inconclusive range, or inconclusive if in between. The inconclusive range includes both its upper and lower bounds. Earlier editions of this *XRF Performance Characteristic Sheet* did not include both bounds of the inconclusive range as "inconclusive." While this edition of the Performance Characteristics Sheet uses a different system, the specific XRF readings that are considered positive, negative, or inconclusive for a given XRF model and substrate remain unchanged, so previous inspection results are not affected.

DOCUMENTATION:

An EPA document titled *Methodology for XRF Performance Characteristic Sheets* provides an explanation of the statistical methodology used to construct the data in the sheets, and provides empirical results from using the recommended inconclusive ranges or thresholds for specific XRF instruments. For a copy of this document call the National Lead Information Center Clearinghouse at 1-800-424-LEAD. A HUD document titled *A Nonparametric Method for Estimating the 5th and 95th Percentile Curves of Variable-Time XRF Readings Based on Monotone Regression* provides supplemental information on the methodology for variable-time XRF instruments. A copy of this document can be obtained from the HUD lead web site, www.hud.gov/offices/lead.

This XRF Performance Characteristic Sheet was developed by QuanTech, Inc., under a contract from the U.S. Department of Housing and Urban Development (HUD). HUD has determined that the information provided here is acceptable when used as guidance in conjunction with Chapter 7, Lead-Based Paint Inspection, of HUD's *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing.*

Appendix H "LEAD SPEAK" – A Brief Glossary

Abatement: A measure or set of measures designed to permanently eliminate lead-based paint hazards or lead-based paint. Abatement strategies include the removal of lead-based paint, enclosure, encapsulation, replacement of building components coated with lead-based paint, removal of lead-contaminated dust, and removal of lead-contaminated soil or overlaying of soil with a durable covering such as asphalt (grass and sod are considered interim control measures). All of these strategies require preparation; cleanup; waste disposal; post-abatement clearance testing; recordkeeping; and, if applicable, monitoring. (For full EPA definition, see 40 CFR 745.223).

Bare soil: Soil not covered with grass, sod, some other similar vegetation, or paving, including the sand in sandboxes.

Chewable surface: An interior or exterior surface painted with lead-based paint that a young child can mouth or chew. A chewable surface is the same as an "accessible surface" as defined in 42 U.S.C. 4851b(2). Hard metal substrates and other materials that cannot be dented by the bite of a young child are not considered chewable.

Deteriorated paint: Any paint coating on a damaged or deteriorated surface or fixture, or any interior or exterior lead-based paint that is peeling, chipping, blistering, flaking, worn, chalking, alligatoring, cracking, or otherwise becoming separated from the substrate.

Dripline/foundation area: The area within 3 feet out from the building wall and surrounding the perimeter of a building.

Dust-lead hazard: Surface dust in residences that contains an area or mass concentration of lead equal to or in excess of the standard established by the EPA under Title IV of the Toxic Substances Control Act. EPA standards for dust-lead hazards, which are based on wipe samples, are published at 40 CFR 745.65(b); as of the publication of this edition of these *Guidelines,* these are 40 µg/ft2 on floors and 250 µg/ft2 on interior windowsills. Also called lead-contaminated dust.

Friction surface: Any interior or exterior surface, such as a window or stair tread, subject to abrasion or friction.

Garden area: An area where plants are cultivated for human consumption or for decorative purposes.

Impact surface: An interior or exterior surface (such as surfaces on doors) subject to damage by repeated impact or contact.

Interim controls: A set of measures designed to temporarily reduce human exposure or possible exposure to lead-based paint hazards. Such measures include, but are not limited to, specialized cleaning, repairs, maintenance, painting, temporary containment, and the establishment and operation of management and resident education programs. Monitoring, conducted by owners, and reevaluations, conducted by professionals, are integral elements of interim control. Interim controls include dust removal; paint film stabilization; treatment of friction and impact surfaces; installation of soil coverings, such as grass or sod; and land use controls. Interim controls that disturb painted surfaces are renovation activities under EPA's Renovation, Repair and Painting Rule.

Lead-based paint: Any paint, varnish, shellac, or other coating that contains lead equal to or greater than 1.0 mg/cm2 as measured by XRF or laboratory analysis, or 0.5 percent by weight (5000 mg/g, 5000 ppm, or 5000 mg/kg) as measured by laboratory analysis. (Local definitions may vary.)

Lead-based paint hazard: A condition in which exposure to lead from lead-contaminated dust, lead-contaminated soil, or deteriorated lead-based paint would have an adverse effect on human health (as established by the EPA at 40 CFR 745.65, under Title IV of the Toxic Substances Control Act). Lead-based paint hazards include, for example, **paint-lead hazards, dust-lead hazards, and soil-lead hazards.**

Paint-lead hazard: Lead-based paint on a friction surface that is subject to abrasion and where a dust-lead hazard is present on the nearest horizontal surface underneath the friction surface (e.g., the window sill, or floor); damaged or otherwise deteriorated lead-based paint on an impact surface that is caused by impact from a related building component; a chewable lead-based painted surface on which there is evidence of teeth marks; or any other deteriorated lead-based paint in any residential building or child-occupied facility or on the exterior of any residential building or child-occupied facility.

Play area: An area of frequent soil contact by children of under age 6 as indicated by, but not limited to, such factors including the following: the presence of outdoor play equipment (e.g., sandboxes, swing sets, and sliding boards), toys, or other children's possessions, observations of play patterns, or information provided by parents, residents, care givers, or property owners.

Soil-lead hazard: Bare soil on residential property that contains lead in excess of the standard established by the EPA under Title IV of the Toxic Substances Control Act. EPA standards for soil-lead hazards, published at 40 CFR 745.65(c), as of the publication of this edition of these *Guidelines*, is 400 µg/g in play areas and 1,200 µg/g in the rest of the yard. Also called lead-contaminated soil.

Appendix I Additional Lead and Lead Safety Resource

Key Units of Measurement

Gram (g or gm): A unit of mass in the metric system. A nickel weighs about 1 gram, as does a 1 cube of water 1 centimeter on each side. A gram is equal to about 35/1000 (thirty-five thousandths of an ounce). Another way to think of this is that about 28.4 grams equal 1 ounce.
µg (microgram): A microgram is 1/1000th of a milligram. To put this into perspective, a penny weighs 2 grams. To get a microgram, you would need to divide the penny into 2 million pieces. A microgram is one of those two million pieces.
µg/dL (microgram per deciliter): used to measure the level of lead in children's and worker's blood to establish whether intervention is needed. A deciliter is a little less than a half a cup.
µg/ft^2 (micrograms per square feet): the unit used to express levels of lead in dust samples. All reports should report levels of lead in dust in µg/ft2.
mg/cm2 (milligrams per square centimeter): used to report levels of lead in paint thru XRF testing.
ppm (parts per million): Typically used to express the concentrations of lead in soil. Can also be used to express the amount of lead in a surface coating on a mass concentration basis. This measurement can also be shown as: µg/g, mg/kg or mg/l.
ppb (parts per billion): Typically used to express the amount of lead found in drinking water. This measurement is also sometimes expressed as: µg/L (micrograms per liter).
EPA/HUD Lead-Based Paint and Lead-Based Paint Hazard Standards

Lead-Based Paint (may be determined in either of two ways)
- Surface concentration (mass of lead per area) 1.0 µg/cm2
- Bulk concentration (mass of lead per volume) 0.5%, 5000 µg/g, or 5000 ppm

Dust-thresholds for Lead-Contamination
- Floors 40 µg/ft2
- Interior Window Sills 250 µg/ft2
- Window Troughs (clearance examination only) 400 µg/ft2

Soil-thresholds for Lead Contamination
- Play areas (used by children under age 6) 400 µg/g, or 400 ppm
- Other areas 1200 µg/g, or 1200 ppm

Resources For Additional Information On Lead-Based Paint And Lead-Based Paint Hazards:
National Lead information Center & Clearinghouse: 1-800-424 LEAD
www.epa.gov/lead/pubs/nlic.htm
Centers for Disease Control and Prevention Lead Program: *www.cdc.gov/lead* Toll-free CDC Contact Center: 800-CDC-INFO; TTY 888-232-6348
Consumer Product Safety Commission *www.cpsc.gov* Toll-free consumer hotline: 1-800-638-2772; TTY 301-595-7054
Environmental Protection Agency Lead Program: *www.epa.gov/lead* 202-566-0500
HUD Office of Healthy Homes and Lead Hazard Control: *www.hud.gov/offices/lead* 202-402-7698
Connecticut Department of Public Health, Lead Poisoning Prevention Program
http://www.ct.gov/dph/
Hearing- or speech-challenged individuals may access the federal agency numbers above through TTY by calling the toll-free Federal Relay Service at 800-877-8339; see also *http://www.federalrelay.us/tty.*

ChemScope INDUSTRIAL HYGIENE • ENVIRONMENTAL CHEMISTRY
15 Moulthrop Street, North Haven, CT 06473-3686 • Phone (203) 865-5605 • Fax (203) 498-1610 • www.chem-scope.com

Scott Feulner
Diversified Technology Consultants (DTC)
2321 Whitney Avenue, Suite 301
Hamden, CT 06518

Revised 6/3/2014
~~5/6/2014~~

ASBESTOS PRE-RENOVATION INSPECTION
SITE 003 – 153 TWIN BROOK ROAD, HAMDEN, CT
APPLICATION #2072
CS#183-76, 4/25/2014, PAGE 1 OF 5

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Attachments:

- Scope of Inspection Drawing(s) – 1 page(s)
- ACM location drawing(s) - 2 page(s)
- PLM Certificate of Analysis report with chain of custody - 6 page(s)
- Sample location drawing(s) - 1 page(s)

Report Distribution:

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Curtis Graham, DTC graham.curtis@teamdtc.com
Michael Casey, DTC michael.casey@teamdtc.com

File Location:

NAS AAUM-Reports\AsbInsp\DS-Prereno_March2014.doc

INTRODUCTION

EXECUTIVE SUMMARY: Asbestos containing materials (ACM) were detected within the scope of this inspection and will need to be properly removed and disposed of prior to renovation that would disturb these materials. Abatement work must be done by a licensed asbestos abatement contractor using proper procedures and practices with licensed and trained individuals.

BUILDING DESCRIPTION: The subject building is a single-family, one-story, ranch-style house totaling approximately 1000 sq ft, which was built in 1951 of wood-frame construction. Heat is supplied from a furnace in the basement, through forced air ducts. At the time of our screening, there were no children under the age of six residing at this subject house and the house was not being used as a daycare facility.

BACKGROUND: We understand the subject house suffered damage as a result of hurricane Sandy on October 29-30, 2012. The house is scheduled to be renovated. We understand the storm caused roof damage which lead to moisture damage in the Kitchen and Living Room. Based on this damage the following items are scheduled for removal and replacement: kitchen floor, kitchen ceiling, kitchen walls, living room ceiling and living room wall A. *Additionally smoke and carbon monoxide detectors are to be installed in the following sheetrock ceilings: all three bedrooms, first floor hallway, basement stairs and basement Family Room.*

SCOPE OF INSPECTION: Asbestos Pre-Renovation Inspection of the kitchen and living room only at the subject house, as directed by our client.

Our work included the following:

- Collection and analysis of building materials within the scope of renovation for asbestos, as required by the regulations.
- *The additional areas of sheetrock ceilings are going to be assumed to have the same ACM taping compound as was found in the living room ceiling, since the sampling damage would be greater than the small holes needed to install the detectors. These sheetrock ceilings will be regulated by OSHA and CT-DPH/EPA.*
- A list with quantity, type and location of asbestos containing materials (ACM) in the scope.
- Report of the findings including ACM location drawings.

This investigation and information provided in this report depends partly on background information provided by the client. This report is intended for the use of the client. The scope of services performed may not be appropriate for other users and any use of this report by third parties is at their sole risk. This report is intended to be used in its entirety. No excerpts may be taken to be representative of this report.

TEST PARAMETERS: This is an Asbestos Pre-Renovation Inspection intended to identify the presence, location, and quantity of any asbestos containing building materials which are part of the Renovation for compliance with OSHA 1926.1101 (k)(2)(i) and CT DPH 19a-332a-1 through 16.

For sampling, EPA Wet Methods are used to prevent fiber release. Building materials sampled are analyzed at our laboratory by EPA method 600/R-93/116. This is currently the approved EPA Test method, which uses Polarized Light Microscopy with Dispersion Staining. The laboratory is accredited by NIST/NVLAP and AIHA, and is a Connecticut Approved Environmental Laboratory for Asbestos Analysis.

INSPECTION REPORT SYNOPSIS

LOCATION NAME AND ADDRESS: Site 003 - 153 Twin Brook Road, Hamden, CT
Application #2072

INSPECTION DATE(S): 4/25/2014

QUALIFICATIONS: The Inspection was conducted by Daniel P. Sullivan:
- EPA & State of Connecticut Accredited Asbestos Inspector, Project Monitor & Project Designer
- State of Connecticut Licensed Asbestos Inspector/Management Planner (#000019)
- State of Connecticut Licensed Asbestos Project Monitor (#000036)
- State of Connecticut Licensed Asbestos Project Designer (#000096)

Dan was assisted by Ziyang Wang. For information about Chem Scope, Inc., log onto http://www.chem-scope.com.

FINDINGS: The following asbestos containing materials (ACM) were detected in the Scope of the Inspection:

MATERIAL	***LOCATION***	***~FOOTAGE***
INTERIOR:		
Marble-style pliable linoleum* with white backing and sticky adhesive* on **Gold/White pliable ACM linoleum with gray fibrous backing and adhesive** (on yellow pliable linoleum* with black fibrous paper backing and brown adhesive on wood floor)	**Kitchen**	**150 sq ft**
Beige ACM taping compound on sheetrock**	Living Room Ceiling	275 sq ft
	Living Room Wall A	175 sq ft
	Bedroom 1	*95 sq ft****
	Bedroom 2	*105 sq ft****
	Bedroom 3	*150 sq ft****
	Hallway	*40 sq ft****
	Bathroom	*40 sq ft****
	Basement Stairs	*40 sq ft****
	Total	***920 sq ft***

*Because these materials are adhered to an ACM material these material will also need to be treated as an asbestos containing material.

**>1% Asbestos was found in the combined results of the beige taping compound and the sheetrock layer; Consequently, the sheetrock and compound is OSHA and EPA-DPH regulated. With additional extensive sampling it may be possible to establish areas of non-asbestos taping compound, but additional sampling may also lead to more inconsistencies. See attached ACM location drawings for exact locations.

****The amount to be disturbed by the work in these rooms is < 1 sq ft per room.*

INSPECTION REPORT SYNOPSIS (cont)

FINDINGS (CONT):
The following is a summary table of the materials that tested as non-Asbestos Containing Material (ACM) (<1%) within the Scope of Work (not already summarized previously):

Material	Location	Sample #'s	Findings
Light gray crumbly sheetrock with brown paper backing and white face coat and white crumbly sheetrock taping compound (walls and ceiling)	Kitchen	183-76-7,9, 10, 12	No Asbestos Detected
Black fibrous paper and adhesive (on yellow fiberglass batt insulation, above sheetrock ceiling)	Kitchen and Living Room	183-76-15,16	No Asbestos Detected
Brown fibrous paper with foil backing (behind sheetrock wall A)	Living Room Wall A	183-76-17,18	No Asbestos Detected

LIMITATIONS OF INSPECTION

It is important to note that every effort is made to detect asbestos (ACM) in the path of the renovation by our inspectors. It is not practical or prudent to demolish the entire wall and ceiling system during an inspection. The owner should be aware of this in case suspect materials or concealed suspect materials are uncovered during the actual renovation.

If suspect materials that were previously not accessible or not sampled during this inspection are discovered during the renovation, or if the scope of the renovation changes to include disturbance of new materials not inspected, then renovation must stop and the materials must be sampled by a CT DPH licensed asbestos inspector prior to disturbance of these materials.

RECOMMENDATIONS

All Asbestos Containing Materials (ACM) detected in the path of the inspection must be removed prior to the disturbance of these materials.

Asbestos removal is regulated by federal and state agencies. Abatement work must be done by a licensed asbestos abatement contractor using proper procedures and practices, including containment, decontamination facilities, negative air units and trained and CT DPH licensed workers. Final re-occupancy testing is also required, if the building is going to be reoccupied after the asbestos removal and strongly recommended even if the building is not going to be re-occupied such as in the case of building demolition, for removal of greater than three (3) sq. ft or linear ft of ACM. A CT DPH Licensed Project Monitor is always required for final visual inspections after asbestos removal.

Please also keep in mind that notification to the DPH is required for asbestos abatement involving greater than 10 linear feet or 25 square feet of or for any demolition. Disposal of all ACM is regulated by EPA and the Connecticut DEEP; an EPA approved landfill must be used.

For the interior drilling of holes for smoke and CO detectors (< 1 sq ft per room): *The work may be done as outlined in CT DPH regulations 19a-332a-10 for spot repairs by persons with a minimum of OSHA Class III training. CT DPH defines a spot repair as any asbestos abatement performed within a facility involving not more than three (3) linear feet or three (3) square feet of asbestos containing material. A CT DPH-licensed asbestos contractor would be the best choice for drilling the holes, since other contractors with the proper training and equipment would be difficult to find. Final re-occupancy testing and notification to the CT DPH are not required, as the amount of asbestos being removed is less than 3 square feet. A CT DPH Licensed Project Monitor is always required for final visual inspections after asbestos removal.*

OSHA regulations 1926.1101 requires that before asbestos removal or repair work (class I, II or III work) is initiated, building owners/facility owners must notify their own employees and employers who are bidding on such work, of the quantity and location of ACM or PACM (presumed asbestos containing material) present in such areas. Also for inadvertently discovered ACM or PACM there is a 24-hour notification requirement to the owner and all employers at the site.

If you have any questions or need more information please call me. Thank you for calling on us.

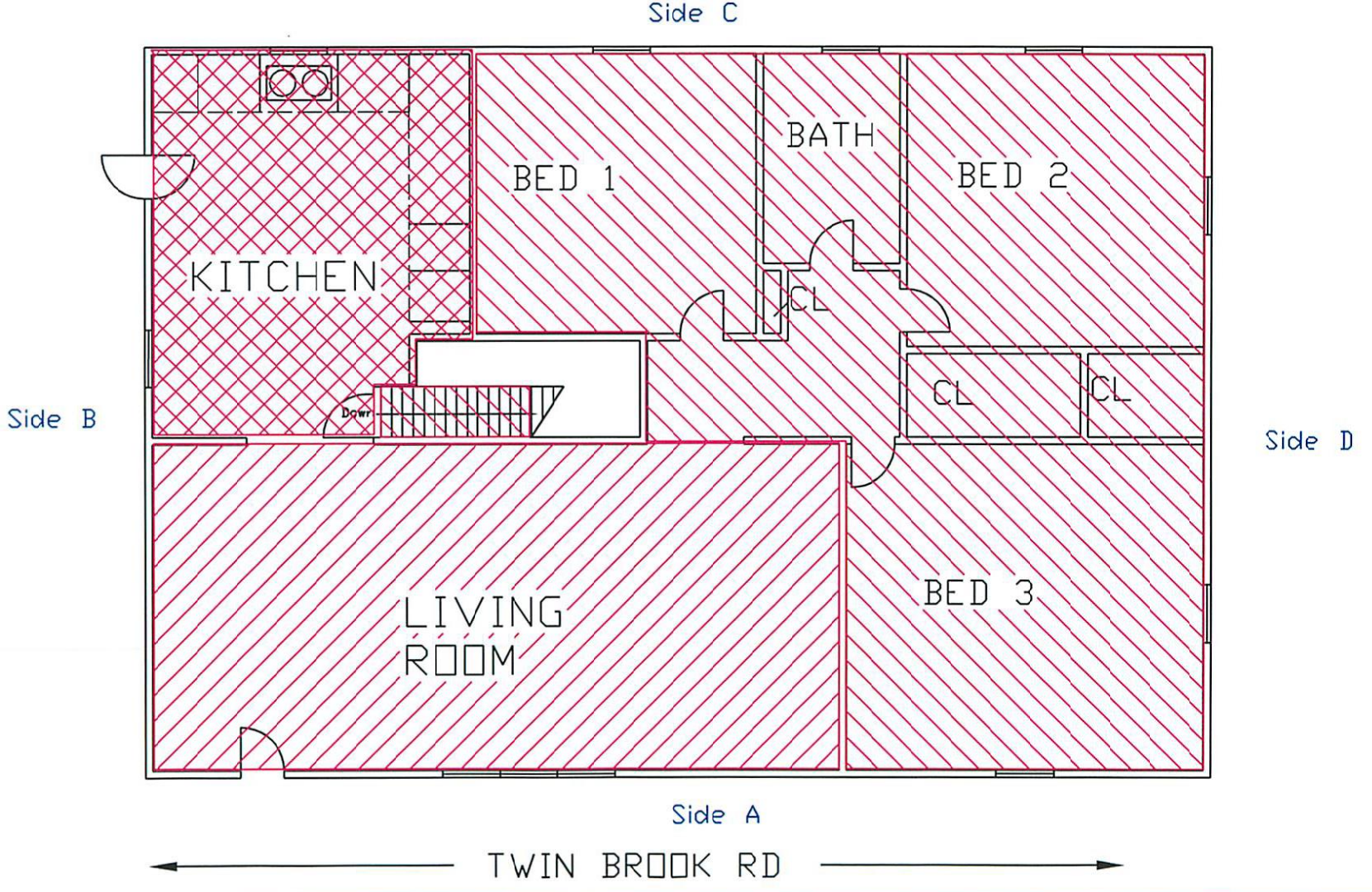
Sincerely,

Dan Sullivan
Vice President, Operations

ChemScope Inc.

Site 003
153 Twin Brook Road, Hamden, CT
Main Floor

SCOPE OF INSPECTION DRAWING



LEGEND OF SYMBOLS

- Floors, walls and ceilings in Scope of Inspection
- Walls and Ceilings in Scope of Inspection
- Sheetrock Ceilings only in Scope of Inspection

NOTATIONS

DRAWN BY:
LEIGH HONOROF

ChemScope Inc.

SHEET TITLE:

Asbestos & Lead Inspection

153 TWIN BROOK RD HAMDEN, CT

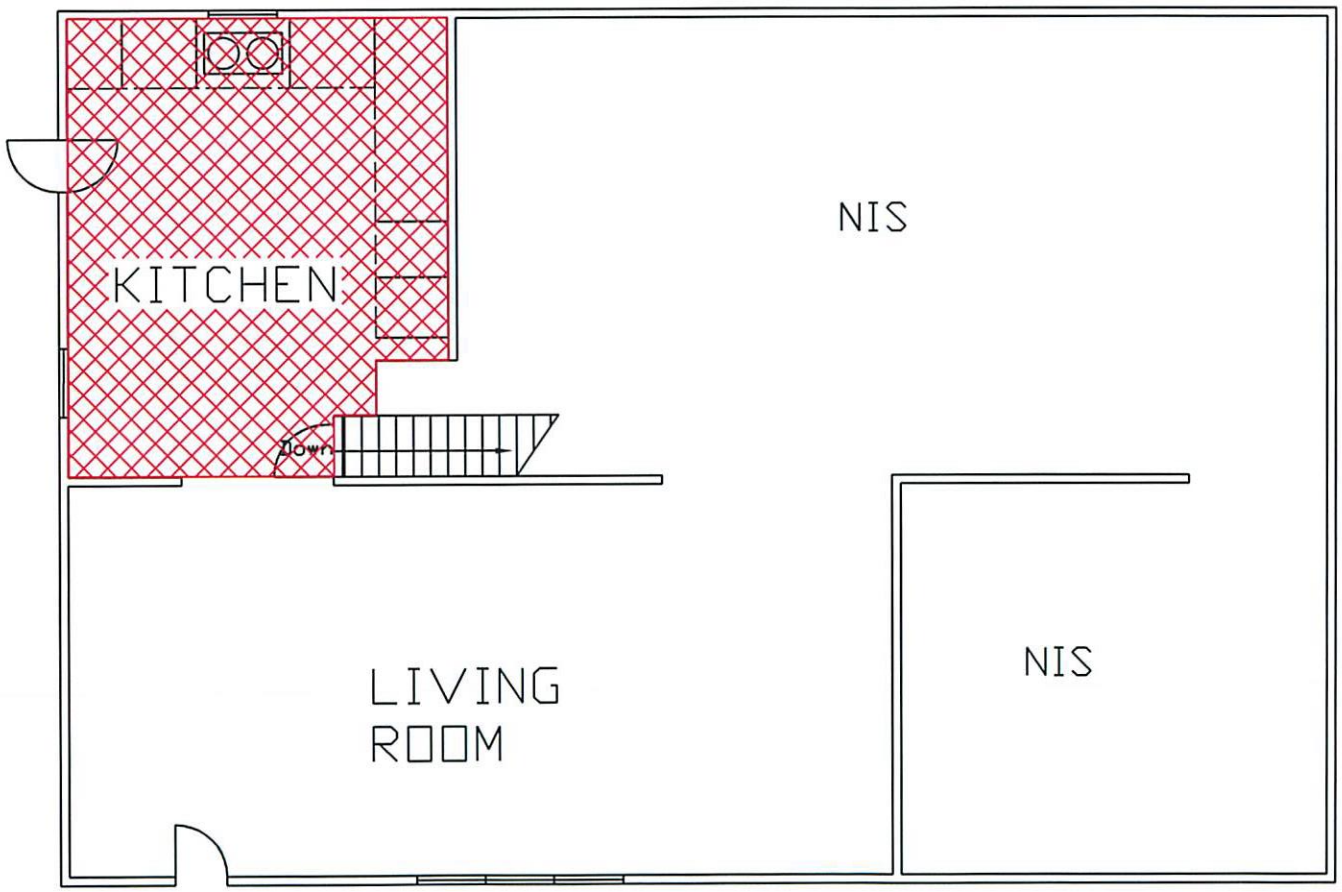
MAIN FLOOR

CHEMSCOPE NUMBER:	DRAWING NUMBER
CS# 183-76	1SR
SCALE: NOT TO SCALE	
DATE: 5-29-14	

ChemScope Inc.

Site 003
153 Twin Brook Road, Hamden, CT
Main Floor
CS# 183-76, 4-25-14

ACM LOCATION DRAWING



LEGEND OF SYMBOLS	
	Location of ACM Linoleum In Scope of Inspection
	See Report for details
NIS	Not in Scope of Inspection

NOTATIONS

DRAWN BY:
LEIGH HONOROF

ChemScope Inc.

SHEET TITLE:

ASBESTOS, LEAD & MOLD INSPECTION

153 TWIN BROOK RD HAMDEN, CT

MAIN FLOOR

CHEMSCOPE NUMBER:	DRAWING NUMBER
CS# 183-76	1 A1
SCALE: NOT TO SCALE	
DATE: 4/25/14	

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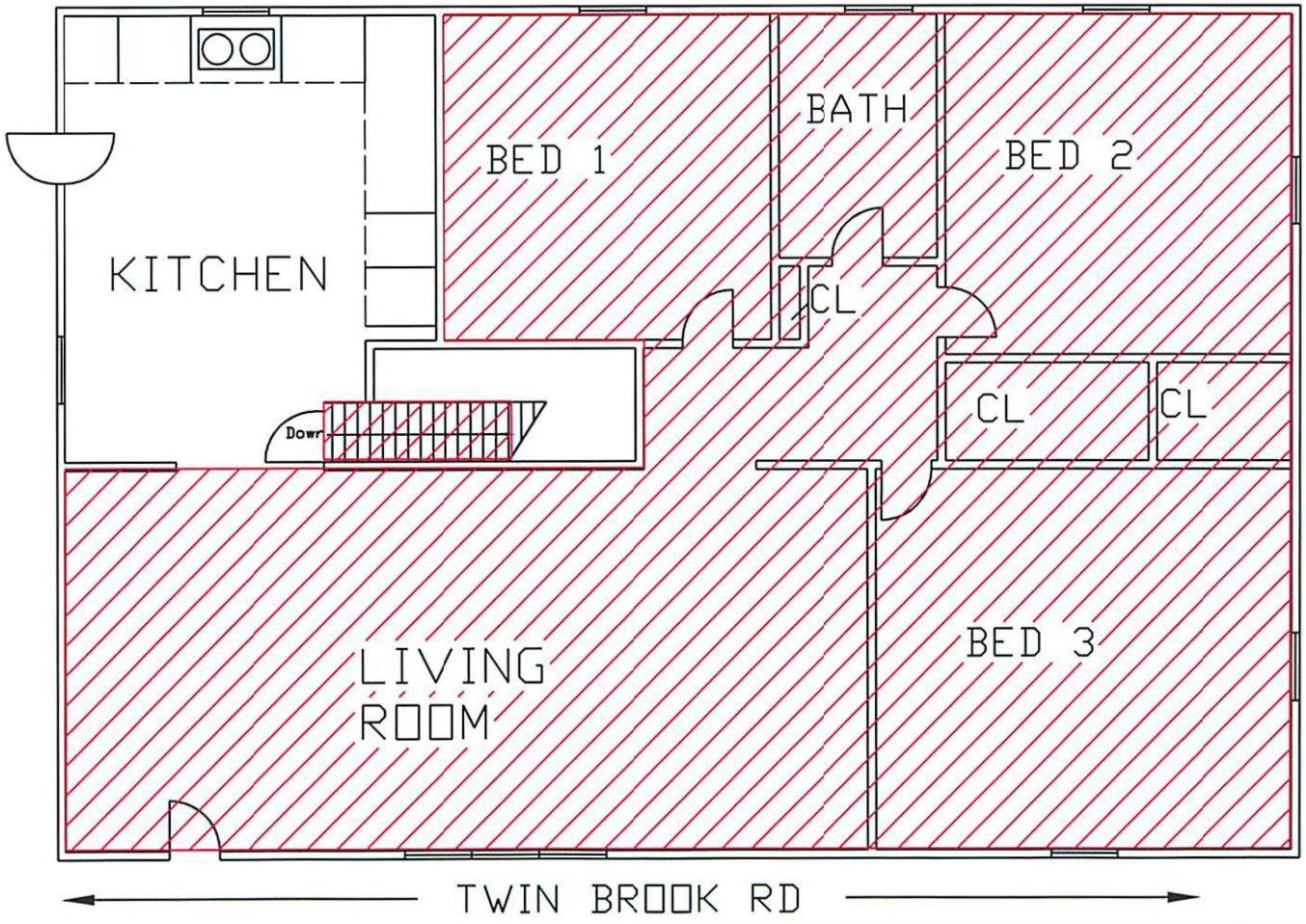
Site 003
153 Twin Brook Road, Hamden, CT
Main Floor



LEGEND OF SYMBOLS

Location of ACM Sheetrock walls & ceilings in scope

NOTATIONS

DRAWN BY:
LEIGH HONOROF

ChemScope Inc.

SHEET TITLE:

Asbestos Inspection

153 TWIN BROOK RD HAMDEN, CT

MAIN FLOOR

CHEMSCOPE NUMBER:	DRAWING NUMBER
CS# 183-76	1 AR
SCALE: NOT TO SCALE	
DATE: 5-29-14	

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15 Moulthrop Street, North Haven, CT 06473-3686 • Phone (203) 865-5605 • Fax (203) 498-1610

Certificate Of Analysis

Diversified Technology Consultants (DTC) - Scott Feulner
2321 Whitney Avenue
Suite 301
Hamden CT 06518

5/2/2014
CS# 183-76

Bulk sample(s) from Site 003, 153 Twin Brook Road, Hamden, CT collected by Dan Sullivan (assisted by Ziyang Wang) on 4/25/2014

Asbestos Identification in the samples. Examination made by Polarized Light Microscopy (PLM) per EPA Test Method 600/R-93/116

Sample Identification	**Findings (Analyzed 5/2/14)**
183-76-1 Marble-style pliable linoleum with white backing and sticky adhesive (on gold/white pliable linoleum with gray fibrous backing and adhesive on yellow pliable linoleum with black fibrous paper backing and brown adhesive on wood floor) / 1st Floor, Kitchen	*Not Analyzed*
183-76-2 Marble-style pliable linoleum with white backing and sticky adhesive (on gold/white pliable linoleum with gray fibrous backing and adhesive on yellow pliable linoleum with black fibrous paper backing and brown adhesive on wood floor) / 1st Floor, Kitchen	*Not Analyzed*
183-76-3 Gold/white pliable linoleum with gray fibrous backing and adhesive (from sample #1) / 1st Floor, Kitchen	*22% Chrysotile Asbestos* *14% Non- Fibrous Particles* *64% Volatile on Ignition*
183-76-4 Gold/white pliable linoleum with gray fibrous backing and adhesive (from sample #2) / 1st Floor, Kitchen	*Not Analyzed*
183-76-5 Yellow pliable linoleum with black fibrous backing and brown adhesive (from sample #1, on wood) / 1st Floor, Kitchen	*No Asbestos Detected* *32% Non- Fibrous Particles* *68% Volatile on Ignition*

Bulk sample(s) from Site 003, 153 Twin Brook Road, Hamden, CT collected by Dan Sullivan (assisted by Ziyang Wang) on 4/25/2014

Asbestos Identification in the samples. Examination made by Polarized Light Microscopy (PLM) per EPA Test Method 600/R-93/116

Sample Identification	**Findings (Analyzed 5/2/14)**
183-76-6 Yellow pliable linoleum with black fibrous backing and brown adhesive (from sample #2, on wood) / 1st Floor, Kitchen	*No Asbestos Detected* *38% Non- Fibrous Particles* *62% Volatile on Ignition*
183-76-7 Light gray crumbly sheetrock with brown fibrous paper backing and beige face coat (wall) / 1st Floor, Kitchen	*No Asbestos Detected* *75% Non- Fibrous Particles* *25% Volatile on Ignition*
183-76-8 Light gray crumbly sheetrock with brown fibrous paper backing and light beige face coat (wall) / 1st Floor, Living Room	*No Asbestos Detected* *78% Non- Fibrous Particles* *22% Volatile on Ignition*
183-76-9 White crumbly sheetrock taping compound (wall) / 1st Floor, Kitchen	*No Asbestos Detected* *87% Non- Fibrous Particles* *13% Volatile on Ignition*
183-76-10 Light gray crumbly sheetrock with brown fibrous paper backing and beige face coat (ceiling) / 1st Floor, Kitchen	*No Asbestos Detected* *76% Non- Fibrous Particles* *24% Volatile on Ignition*
183-76-11 Light gray crumbly sheetrock with brown fibrous paper backing and beige face coat (ceiling) / 1st Floor, Living Room	*No Asbestos Detected* *79% Non- Fibrous Particles* *21% Volatile on Ignition*
183-76-12 White crumbly sheetrock taping compound (ceiling) / 1st Floor, Kitchen	*No Asbestos Detected* *88% Non- Fibrous Particles* *12% Volatile on Ignition*

Bulk sample(s) from Site 003, 153 Twin Brook Road, Hamden, CT collected by Dan Sullivan (assisted by Ziyang Wang) on 4/25/2014

Asbestos Identification in the samples. Examination made by Polarized Light Microscopy (PLM) per EPA Test Method 600/R-93/116

Sample Identification	**Findings (Analyzed 5/2/14)**
183-76-13 Beige crumbly sheetrock taping compound (ceiling) / 1st Floor, Living Room	*4% Chrysotile Asbestos (point counted)* *80% Non- Fibrous Particles* *17% Volatile on Ignition*
183-76-14 Black fibrous paper and adhesive (on yellow fiberglass batt insulation, above sheetrock ceiling) / 1st Floor, Kitchen	*No Asbestos Detected* *<1% Non- Fibrous Particles* *60% Volatile on Ignition* *40% Fiberglass*
183-76-15 Black fibrous paper and adhesive (on yellow fiberglass batt insulation, above sheetrock ceiling) / 1st Floor, Living Room	*No Asbestos Detected* *<1% Non- Fibrous Particles* *70% Volatile on Ignition* *30% Fiberglass*
183-76-16 Brown fibrous paper with foil backing (behind sheetrock wall) / 1st Floor, Living Room	*No Asbestos Detected* *17% Non- Fibrous Particles* *83% Volatile on Ignition* *<1% Mineral Wool*
183-76-17 Brown fibrous paper with foil backing (behind sheetrock wall) / 1st Floor, Living Room	*No Asbestos Detected* *16% Non- Fibrous Particles* *84% Volatile on Ignition* *<1% Mineral Wool*
183-76-18 Light gray crumbly sheetrock with brown fibrous paper backing and beige face coat and beige crumbly sheetrock taping compound (ceiling) / 1st Floor, Living Room	*1-2% Chrysotile Asbestos (point counted)* *76% Non- Fibrous Particles* *22% Volatile on Ignition*

PARAMETERS
ASBESTOS PLM ANALYSIS
(Revised 3/22/13)

1. *Materials which contain >1% asbestos (greater than 1%) by PLM (polarizing light microscopy) analysis are considered to be asbestos containing materials under EPA and the State of Connecticut Regulations. OSHA still regulates material with <1%. (Contact laboratory for information.) {Note: A more sensitive method is available called TEM (transmission electron microscopy). TEM may detect asbestos fibers that PLM cannot see, but the above agencies' enforcement is based on PLM analysis. Rules may differ for states other than Connecticut. It is best to check with the individual state. For example, New York State requires TEM confirmation of negative PLM results on floor tile}.*

2. *If no asbestos is detected in a sample, or if the asbestos content is less than 1% by PLM, additional samples of the same material should be submitted for confirmation. Please check with the laboratory for guidance on the number of samples needed. Sample collection in Connecticut must be by a DPH Licensed Asbestos Inspector. Many other states also require licensing.*

3. *Floor Tile Mastic: Mastic under floor tile should be separately sampled by scraping some of the mastic from the floor to avoid contamination from the floor tile.*

4. *Although Chem Scope, Inc. takes great effort to insure accuracy in the estimation of asbestos in the materials analyzed, no quantitation method is without some uncertainty. Based on independent calibration studies and comparison of Chem Scope's quantitative results with NVLAP and AIHA round robin programs we estimate our uncertainty in quantitation to be relatively small. The average relative uncertainty of the estimate is calculated to be 35% for samples that contain less than 10% asbestos. This means a estimate of 10% asbestos in a sample has a probable range of 6.5% to 13.5% while an estimate of 1% has a range of 0.65% to 1.35%.*

5. *The presence of non-asbestos components, which are recognized by the PLM analyst, is reported with the estimated amounts. This is not an exhaustive analysis for the non-asbestos materials since the primary purpose is to determine if asbestos is present and, if so, how much is present of each type of asbestos.*

6. *Results reported apply only to the sample(s) analyzed.*

7. *Special treatment of samples: Chem Scope, Inc. routinely uses gravimetric sample reduction techniques such as low temperature ashing or acid dissolution on samples like floor tile, roofing materials, glue dots, or high cellulose content samples prior to PLM analysis. These methods are used to aid in the PLM analysis and to provide better quantitative data. Layered samples, if possible, are analyzed separately as individual layers. However, in accordance with the method, if any layer contains >1% asbestos (greater than 1%) it is to be considered an asbestos containing material. All results are reported to the original sample basis.*

8. *Sample results are not corrected for blanks. Analytical blanks are run daily and if contamination is suspected the samples are rerun.*

9. *Chem Scope, Inc. performs "400 point" point counting when the asbestos content is visually estimated to be less than 10%. There is no additional charge for this analysis.*

The Scope of Accreditation referenced in this report applies to bulk asbestos fiber analysis by PLM (Polarized Light Microscopy).
Accreditation does not imply endorsement by NVLAP, NIST or any Federal or State Agency.
This report pertains only to the samples tested and may not be reproduced in part.
Condition of the samples at the time of receipt was acceptable unless otherwise noted on the Certificate of Analysis.
See test parameters above and attached chain of custody form.
We would love to hear from you. Comments? Questions? Please call or email us at chem.scope@snet.net.

ChemScope, Inc. is accredited by AIHA LAP, LLC LAB #100134
NVLAP Lab Code 101061-0.
Connecticut Department of Public Health (DPH) Approved Environmental Lab PH 0581

Signature	Signature (if applicable)	Authorized Signature or	Authorized Signature or	Authorized Signature
Analyst	Inspector	Suzanne Cristante Laboratory Director	Izabela Kremens Quality Manager	Ronald Arena President

Chem Scope, Inc.
15 Moulthrop Street, North Haven CT 06473
203-865-5605

Form FL-4A Rev 11/12/13
(Issued By SC)

CHAIN OF CUSTODY

Emailed____
Faxed____
Called____
Logged____

Site 003

Sample Source: 153 Twin Brook Road, Hamden, CT CS Job CS# 183-76

Sampled by: DA/ZW Date Sampled: 4/25/14 Customer Name: Diversified Technology Consultants (DTC) -

CS Sample#	Client Sample#	Sample Description	Comments
183-76-(1-17)		Asb Pre-Reno bulks	
		(see Attached)	

Sample Turnaround: 1 week 5/2/14

Analysis Requested(if variable, use comment column) PLM

Check if you want sample returned ____ (sampled will be disposed of after 30 days).

Relinquished by Dan Zw Date 4/25/14 Time 3:15pm Received by
Relinquished by ____ Date ____ Time ____ Received by

Other Special Instructions: ____

Result Transmittal Instructions (for Chem Scope to transmit): Tell DS for report

FOR CHEM SCOPE, INC. TO FILL OUT IF SAMPLES ARE GOING TO OUTSIDE LAB:

Name of Laboratory: ____ Method of Transportation to Laboratory: ____

Result Transmittal Instructions (for outside Lab to Chem Scope, Inc): ***PLEASE FAX RESULTS***

The person submitting samples is responsible for obtaining true and representative samples, for complying with applicable regulations and for the use of the data obtained from the analysis. For example, many states have licensing and laboratory approval requirements. Please contact the individual states if you have any questions regarding specific sampling or approval requirements. For Connecticut sites, we have licensed inspectors available to collect client samples and to perform building inspections.

Dear Laboratory Customer or Potential Customer,

New laboratory accreditation standards require us to provide our clients information about our services to make sure that your requirements for testing are adequately defined, documented and understood. The following is for your information. Please call us if you have any questions or comments.

Type of Samples:
/_/ PCM cassettes are routinely run by NIOSH Method 7400.
/ / Bulk materials are run by EPA Method: #600/R-93/116.

Air Samples: NIOSH 7400 Method counts all fibers. This method may be used for personal air samples and for finals. Two field blanks must be submitted for each set of samples. In the unlikely event that there is to be any deviation from the standard test, you will be consulted by phone before the work begins. Those clients who have not had NIOSH 582 or AHERA asbestos training courses (either supervisor or project monitor) should consult with the lab director for more information. The test parameters are further explained in the analytical report.

Bulk materials: sampled are analyzed by the latest EPA Method: (#600/R-93/116) which uses polarized light microscopy (PLM). When asbestos is detected and the amount is estimated to be <10%, we automatically point count the samples. When there are interfering substances present, we may use ashing, acid washing or other procedures described in the method to handle the interference. Those clients who have not had AHERA asbestos training courses (either inspector, supervisor or project designer) should consult with the lab director for more information. The test parameters are further explained in the analytical report.

All Samples must be clearly labeled with source name and identification number or sufficient information from the client to make this sample uniquely identified. (We will then add our notebook #, page # (batch) and unique number within the batch.) Samples must be in a clean, air tight package such as a zip loc bag. Appropriate completed paperwork must accompany the sample. Bulk and air samples may not be submitted in the same package.

As soon as available bench top results will be faxed to you and reports will then be mailed. We will retain air samples for at least three months and bulk samples for 6 months unless you advise us otherwise.

You are welcome to visit the laboratory at any time to discuss the work, monitor the work or verify our testing services. We appreciate your business and encourage any feedback regarding improving our services or our quality system. Please take a minute to complete the following survey and mail/fax it to ChemScope, Inc.

Customer Service Survey

To help us improve our services give your opinions to the following:

1- The printed laboratory report was complete and easy to understand. ☐ YES ☐ NO
If no, please explain _____.

2- The turn around time for results met your expectations/needs. ☐ YES ☐ NO
If no, please explain _____.

3- How likely are you to recommend ChemScope Inc. to someone?
☐ Excellent ☐ Very Good ☐ Good ☐ Fair ☐ Poor

4- How likely are you to return to ChemScope in the future if the need arises?
☐ Excellent ☐ Very Good ☐ Good ☐ Fair ☐ Poor

5. On a scale of 1 to 5 where 1 represents "Satisfied" and 5 represents "Dissatisfied", how would you rate your level of overall satisfaction.
☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

6- Please add any additional comments or suggestions that would be helpful when you use our services:
_____

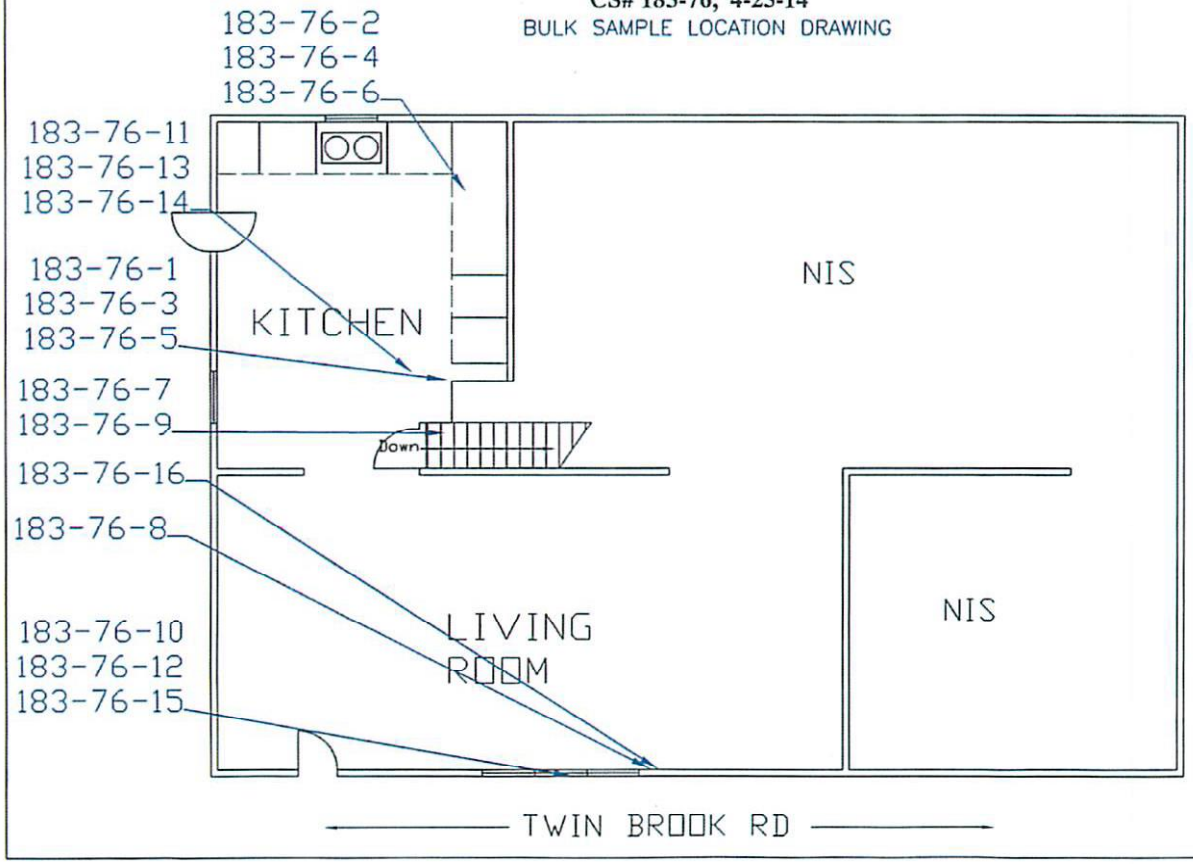
Name _____ Company _____

Address _____ Telephone/e-mail _____

Can we contact you regarding this survey? ☐ YES ☐ NO

ChemScope Inc.

Site 003
153 Twin Brook Road, Hamden, CT
Main Floor
CS# 183-76, 4-25-14
BULK SAMPLE LOCATION DRAWING



LEGEND OF SYMBOLS	
1	Bulk Sample No.
NIS	Not in Scope of Inspection

NOTATIONS

DRAWN BY:
LEIGH HONOROF

ChemScope Inc.

SHEET TITLE:

ASBESTOS, LEAD & MOLD INSPECTION

153 TWIN BROOK RD HAMDEN, CT

MAIN FLOOR

CHEMSCOPE NUMBER	DRAWING NUMBER
CS# 183-76	1 B
SCALE: NOT TO SCALE	
DATE: 4/25/14	

ChemScope INDUSTRIAL HYGIENE • ENVIRONMENTAL CHEMISTRY
15 Moulthrop Street, North Haven, CT 06473-3686 • Phone (203) 865-5605 • Fax (203) 498-1610 • chem-scope.com

Scott Feulner
Diversified Technology Consultants (DTC)
2321 Whitney Avenue, Suite 301
Hamden, CT 06518

5/29/2014

RADON AIR SAMPLING
SITE 003 – 153 TWIN BROOK ROAD, HAMDEN, CT
APPLICATION #2072
CS#183-76, 4/19/2014 AND 5/21/2014, PAGE 1 OF 4

TABLE OF CONTENTS

Attachments:

- Radon Analysis report, 2 page(s)
- Chain of Custody Document(s), 2 page(s)
- Sample location drawing(s), 1 page(s)
- Radon Occupant Notification Forms, 3 page(s)
- Radon Training Qualification, 1 page(s)

Report Distribution:

Scott Feulner, DTC Scott.Feulner@teamdtc.com
Curtis Graham, DTC graham.curtis@teamdtc.com
Michael Casey, DTC michael.casey@teamdtc.com

File Location:

NAS D(dan):\myfilesds\mydocuments\DS_Radon_2014.doc

INTRODUCTION

EXECUTIVE SUMMARY: Radon activity detected was below 4.0 pCi/L. Since the initial results are less than 4.0 pCi/L follow-up testing is probably not needed. The EPA recommends retesting a home every two years.

PURPOSE: To determine if Radon is present in the in the subject home and at what levels.

BUILDING DESCRIPTION: The subject building is a single-family, one-story, ranch-style house totaling approximately 1000 sq ft, which was built in 1951 of wood-frame construction. Heat is supplied from a furnace in the basement, through forced air ducts.

BACKGROUND: We understand the subject house suffered damage as a result of hurricane Sandy on October 29-30, 2012. The house is scheduled to be renovated. We understand the storm caused roof damage, which lead to moisture damage in the Kitchen and Living Room. Based on this damage the following items are scheduled for removal and replacement: kitchen floor, kitchen ceiling, kitchen walls, living room ceiling and living room wall A. Additionally smoke and carbon monoxide detectors are to be installed in the following sheetrock ceilings: all three bedrooms, first floor hallway, basement stairs and basement Family Room. The government run program funding the work is requiring that radon be evaluated prior to the renovation work.

SCOPE OF INSPECTION: We conducted short-term simultaneous radon testing at the subject home.

This investigation and information provided in this report depends partly on background information provided by the client. This report is intended for the use of the client. The scope of services performed may not be appropriate for other users and any use of this report by third parties is at their sole risk. This report is intended to be used in its entirety. No excerpts may be taken to be representative of this report.

METHOD OF TESTING: For sampling we followed protocols outlined in "Protocols for Radon and Radon Decay Product Measurements in Homes" (EPA, May 1993). EPA recommends that testing take place in the lowest level of the home, which is currently suitable for occupancy. This means the lowest level that is currently lived in. Measurements should be made in a room, which is used regularly. The basement in this case is mostly unfinished, so samples were run in the living room. Measurements were taken in an area at least 20" above the floor and at least 3' from any door, window or exterior wall. Measurements were not taken near HVAC vents, fans or in an area of frequent drafts.

Samples were collected by ChemScope and analyzed at EMSL (Cinnaminson, NJ). EMSL is a DPH approved Environmental Lab and a NEHA certified Analytical Laboratory. (See analytical reports enclosed). Samples were analyzed using liquid scintillation radon detectors and counted on a liquid scintillation counter using approved EPA testing protocols for Radon in Air testing.

For more information on this method go to:
http://www.epa.gov/radon/pdfs/homes_protocols.pdf

RADON AIR SAMPLING
SITE 003 – 153 TWIN BROOK ROAD, HAMDEN, CT
APPLICATION #2072
CS#183-76, 4/19/2014 AND 5/21/2014, PAGE 3 OF 4

INSPECTION REPORT SYNOPSIS

LOCATION NAME AND ADDRESS: Site 003, Application #2072
153 Twin Brook Road, Hamden, CT

INSPECTION DATE(S): 5/19/2014-5/21/2014.

QUALIFICATIONS: The survey team consisted of inspector, Dan Sullivan. Dan is a NRPP (National Radon Proficiency Program) trained technician and his certification number is 107005RT.

For information about Chem Scope, Inc., log onto http://www.chem-scope.com.

FINDINGS: The following chart is a summary of the results of our Radon sampling:

Sample Location	Canister #	Sample #'s	Radon Activity (pCi/L)
Living Room	168891	183-76-1R	0.5
Living Room (Duplicate)	169090	183-76-1R	0.6
Living Room	168913	183-76-2R	0.6
Living Room (Blank)	169042	183-76-BLK	None Detected

Note: None of the samples collected were equal to or greater than 4.0 pCi/L. The EPA recommends a follow-up test (either short-term or long-term) if the average of the two short-term simultaneous tests is greater than or equal to 4.0 pCi/L and less than 10 pCi/L. If the average of the follow-up and initial tests is equal to or greater than 4.0 pCi/L then remedial action is required.

Temperature & Humidity Results

Location	%RH 5/19/14 8:15am	Air Temp (°F) 5/19/14	Pressure (mm Hg) 5/19/14	%RH 5/21/14 8:15am	Air Temp (°F) 5/21/14	Pressure (mm Hg) 5/21/14
Living Room	68	71	766	73	73	761
Exterior	43	55	766	80	53	761

The sling psychrometer is the classical method for measuring humidity. Two ASTM thermometers are secured to a device that is spun through the air. One of the thermometers has a wick on the end soaked in water (WB or wet bulb reading). The other thermometer has no wick (DB or dry bulb reading = room temperature). The principle is that for a given temperature, the difference in WB and DB readings is a direct measure of the amount of water in the air. If air were very dry, it would evaporate much more water from the DB and the evaporation causes cooling. Results can be converted to %RH and dew point (DP). The dew point is a measure of the absolute amount of water in the air and is more useful in comparisons than the relative humidity, which is also affected by temperature.

RADON AIR SAMPLING
SITE 003 – 153 TWIN BROOK ROAD, HAMDEN, CT
APPLICATION #2072
CS#183-76, 4/19/2014 AND 5/21/2014, PAGE 4 OF 4

GENERAL INFORMATION ABOUT RADON

From "Protocols for Radon and Radon Decay Product Measurements in Homes" (EPA, May 1993): "The average year-round residential indoor radon level is estimated to be about 1.3 pCi/L, and about 0.4 pCi/L of radon is normally found in outside air. The U.S. Congress has set a long-term goal that indoor radon levels be no more than outdoor levels. There is some risk from radon levels below 4 pCi/L, and EPA recommends that the homeowner consider reducing the radon level if the average of the first and second short-term measurements or if a long-term follow-up measurement is between 2 and 4 pCi/L (0.01 and 0.02 WL). While it is not yet technologically achievable for all homes to have their radon levels reduced to outdoor levels, the radon levels in some homes today can be reduced to 2 pCi/L or below."

LIMITATIONS OF SAMPLING

The radon test run was a short-duration test (2-90 days). The test is designed to be run under Closed- building conditions. The occupants were given notice of the testing by our client prior to our testing and given instructions on maintaining Closed-building conditions during the test. ChemScope is not responsible for maintaining Closed-building conditions; that is the responsibility of the occupants. The building conditions appeared to meet Closed-building conditions when we arrived to set-up the test and again when we arrived to pick-up the canister at the conclusion of the test. The occupants have signed our form indicating that Closed-building conditions were kept during the duration of the test (48 hrs). See attached notification forms.

RECOMMENDATIONS

Radon activity detected was below 4.0 pCi/L. Since the initial resluts are less than 4.0 pCi/L follow-up testing is probably not needed. The EPA recommends retesting a home every two years or if the basement becomes more frequently used.

Please call me if there are any questions about this report or if you need further assistance.

Thank you for calling on us.

Dan Sullivan
Vice President, Operations

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-0327
http://www.EMSL.com RadonLab@emsl.com

EMSL Order:	381402642
CustomerID:	CHEM51
CustomerPO:	183-76-1R & 2R
ProjectID:	

Attn: **Dan Sullivan**
ChemScope, Inc.
15 Moulthrop Street
North Haven, CT 06473

Phone:	(203) 865-5605
Fax:	(203) 498-1610
Received:	05/23/14 2:50 PM
Analysis Date:	5/24/2014
Collected:	5/19/2014

Project: **CS #: 183-76-1R, 2R**

Test Site: **Site 003**
153 Twin Brook Road
Hamden, CT 06514

Samples for EMSL Kit 100462

Liquid Scintillation ID	Location	Radon Activity pCi/L	Start	Stop	Temperature F	Humidity %	Sample Type
168891	Living Room	0.5	5/19/2014	5/21/2014	72	70.5	Customer
381402642-0001			8:17:00 AM	8:17:00 AM			
Sample Notes:							
169090	Living Room	0.6	5/19/2014	5/21/2014	72	70.5	Duplicate
381402642-0002			8:17:00 AM	8:17:00 AM			
Sample Notes:							

Duplicate RPD = 18.2%

Samples for EMSL Kit 100455

Liquid Scintillation ID	Location	Radon Activity pCi/L	Start	Stop	Temperature F	Humidity %	Sample Type
168913	Living Room	0.6	5/19/2014	5/21/2014	72	70.5	Customer
381402642-0003			8:17:00 AM	8:17:00 AM			
Sample Notes:							
169042	Living Room	0	5/19/2014	5/21/2014	72	70.5	Blank
381402642-0004			8:17:00 AM	8:17:00 AM			
Sample Notes:							

The radon test was performed using a liquid scintillation radon detector/s and counted on a liquid scintillation counter using approved EPA testing protocols for Radon in Air testing. The EPA recommends fixing your home if the average of two short-term tests taken in the lowest lived-in level of the home show radon levels that are equal to or greater than 4.0pCi/L.
The EPA recommends retesting your home every two years.

Please contact EMSL Analytical, Inc. or your State Health Department for further information.
All procedures used for generating this report are in complete accordance with the current EPA protocols for the analysis of Radon in Air.

Report Note

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-0327
http://www.EMSL.com RadonLab@emsl.com

EMSL Order:	381402642
CustomerID:	CHEM51
CustomerPO:	183-76-1R & 2R
ProjectID:	

Attn: **Dan Sullivan**
ChemScope, Inc.
15 Moulthrop Street
North Haven, CT 06473

Phone:	(203) 865-5605
Fax:	(203) 498 1610
Received:	05/23/14 2:50 PM
Analysis Date:	5/24/2014
Collected:	5/19/2014

Project: **CS #: 183-76-1R, 2R**

Test Site: **Site 003**
153 Twin Brook Road
Hamden, CT 06514

Analyst(s)

Laura Freeman (4)

Garrett A. Ray, Laboratory Manager
Certified Radon MeasurementSpecialist NRSB 5SS0093
NJ MES12264, FL R2001, NE 116, PA 2572

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ

Initial report from 05/27/2014 11:19:48

Please visit www.radontestinglab.com

OrderID: 381402642

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
Tel: 800-220-3675 • Fax: 856-786-0327
www.radontestinglab.com

381402642

RECEIVED EMSL CINNAMINSON, N.J. 2014 MAY 23 P 2:46

DOM: 5/9/14 m#1
EXP: 5/9/15

CS# 183-76-IR
CHEMSI
5day

Radon In Air Data Sheet

Tear Here

Send Written Report To:

Name Dan Sullivan - ChemScope, Inc.
Address 15 Mowthrop Street
City North Haven State CT Zip 06473
Phone 203-865-5605 Fax 203-498-1610
Email sullivan.chemscope@snet.net
Technician Name Dan Sullivan
Technician Certification # 107005 RT
Technician Signature Dan Sullivan

1ST RED VIAL # 168913

LOCATION

☐ Basement ☐ First Floor ☐ Bedroom ☐ Den
☒ Living Room ☐ Other _____
☐ Location in Room _____

2ND RED VIAL # 169042 (Blank)
(If Purchased)

The device has been scientifically tested to provide reliable indoor radon measurements when exposed to temperatures between 60 and 80 degrees F; temperatures outside this range will invalidate the test results.

Kit # 100455 (Outside of Box)

Property Tested:

Name Site 003
Address 153 Twin Brook Rd
City Hamden
Municipality _____ County ~~USA~~ New Haven 15119
State CT Zip 06514
☐ Check here if this is a Post Mitigation test.
Technician Name Dan Sullivan
Technician Certification # ~~107005~~ 107005 RT
Technician Signature Dan Sullivan 05/16/14

INDOOR CONDITIONS

Temperature 72 °F Humidity 70.5 %

EXPOSURE PERIOD

Beginning Date: 05 / ~~16~~ 19 / 2014 DS 5/19/14
Time: 8:17 (AM) / PM (Circle)

Ending Date: 05 / 21 / 2014
Time: 8:17 (AM) / PM (Circle)

The test device must remain open for 48 to 96 hours • Return this section with the test device to the laboratory

OrderID: 381402642

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
Tel: 800-220-3675 • Fax: 856-786-0327
www.radontestinglab.com

381402642

RECEIVED
EMSL
CINNAMINSON, NJ
2014 MAY 23 P 2:46

DOM: 5/9/14 m# 1
EXP: 5/9/15

CS# 183-76-2R

CHEMSI
5day

Radon In Air Data Sheet

Tear Here

Send Written Report To:

Name Dan Sullivan
Address 15 Moulthrop Street
City North Haven State CT Zip 06473
Phone 203-865-5605 Fax 203-498-1610
Email sullivan.chemscope@snet.net
Technician Name Dan Sullivan
Technician Certification # 107005 RT
Technician Signature Dan Sullivan

1ST RED VIAL # 168891

LOCATION

☐ Basement ☐ First Floor ☐ Bedroom ☐ Den
☒ Living Room ☐ Other _____
☐ Location in Room _____

2ND RED VIAL # 169090 (DUP.)
(If Purchased)

The device has been scientifically tested to provide reliable indoor radon measurements when exposed to temperatures between 60 and 80 degrees F; temperatures outside this range will invalidate the test results.

Kit # 100462 (Outside of Box)

Property Tested:

Name Site 003
Address 153 Twin Brook Rd
City Hamden
Municipality _____ County New Haven
State CT Zip _____
☐ Check here if this is a Post Mitigation test.
Technician Name Dan Sullivan
Technician Certification # 107005 RT
Technician Signature Dan Sullivan

INDOOR CONDITIONS

Temperature 72 °F Humidity 70.5 %

EXPOSURE PERIOD

Beginning Date: 05 / ~~16~~ 15/14 05/19/14 / 2014
Time: 8:17am (AM) / PM (Circle)

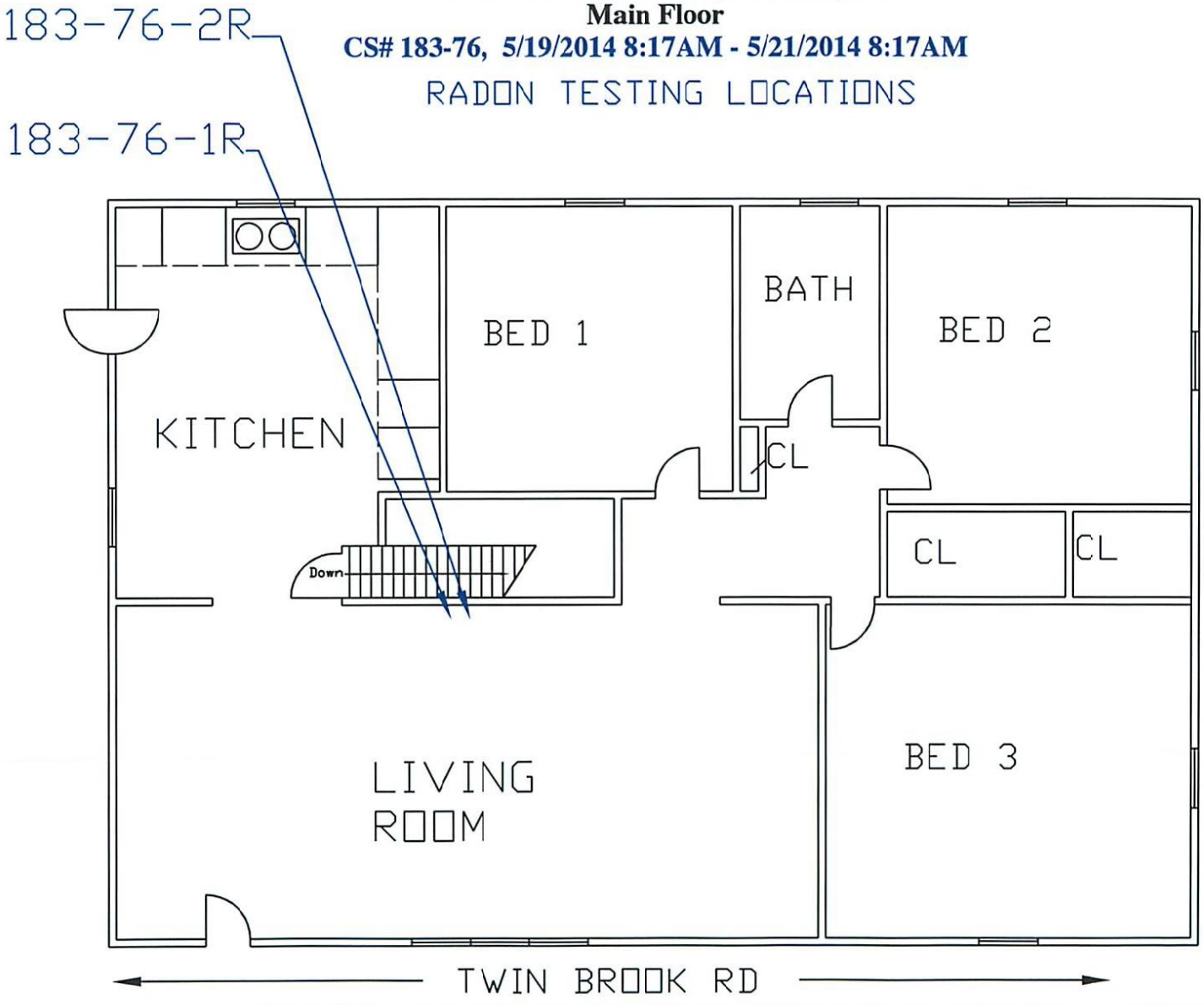
Ending Date: 05 / 21 / 2014
Time: 8:17 (AM) / PM (Circle)

The test device must remain open for 48 to 96 hours • Return this section with the test device to the laboratory

ChemScope Inc.

Site 003
153 Twin Brook Road, Hamden, CT
Main Floor
CS# 183-76, 5/19/2014 8:17AM - 5/21/2014 8:17AM

RADON TESTING LOCATIONS



LEGEND OF SYMBOLS

#	Radon Test Locations

NOTATIONS

DRAWN BY:
LEIGH HONOROF

ChemScope Inc.

SHEET TITLE:

Radon Testing

153 TWIN BROOK RD
HAMDEN, CT

MAIN FLOOR

CHEMSCOPE NUMBER	DRAWING NUMBER
CS# 183-76	1R
SCALE: NOT TO SCALE	
DATE: 5-29-14	

ChemScope *INDUSTRIAL HYGIENE • ENVIRONMENTAL CHEMISTRY*
15 Moulthrop Street, North Haven, CT 06473-3686 • Phone (203) 865-5605 • Fax (203) 498-1610

PRIOR NOTICE OF INSPECTION

A radon test is scheduled for the property at 153 Twin Brook Road, Hamden, CT

Tentative device placement Monday
Day ~~Friday~~ Date ~~5/16/2014~~ 5/19/14 Time 8:00AM
DA 5/16 DA 5/16

Tentative device pick-up Wednesday
Day ~~Monday~~ Date ~~5/19/2014~~ 5/21/14 Time 8:00AM
DA 5/16 DA 5/16

Please inform the occupant. *We will request a signature on our standard form to ensure required conditions can be met to help assure the test is accurate.*

Required Closed-building conditions

- Closed-building conditions must be maintained for 12 hours prior to the initiation of measurements lasting less than four days and throughout the test period.
- All windows on all levels must be kept closed and external doors must be kept closed (except for momentary entry and exit).
- Heating and cooling systems must be set to normal, occupied operating temperatures; fan/blower controls must be set to intermittent activity unless continuous activity is a permanent setting.
- Whole house fans must not be operated.
- Occupants should avoid excessive operation of clothes dryers, range hoods, bathroom fans and other mechanical systems that draw air out of the building.
- Wood burning fireplaces must not be operated unless they are the primary sources of heat for the dwelling.

We thank you for your cooperation in helping to assure safe and healthy homes. For any concerns or questions please contact me at 203-865-5605.

Sincerely,

Daniel P. Sullivan
Vice President, Operations

D(dan):\myfilesds\mydocuments\Radon\Radon Forms 2014.doc

ChemScope *INDUSTRIAL HYGIENE • ENVIRONMENTAL CHEMISTRY*
15 Moulthrop Street, North Haven, CT 06473-3686 • Phone (203) 865-5605 • Fax (203) 498-1610

RADON SURVEY IN PROGRESS

Required Closed-building conditions:

- Closed-building conditions must be maintained for 12 hours prior to the initiation of measurements lasting less than four days and throughout the test period.
- All windows on all levels must be kept closed and external doors must be kept closed (except for momentary entry and exit).
- Heating and cooling systems must be set to normal, occupied operating temperatures; fan/blower controls must be set to intermittent activity unless continuous activity is a permanent setting.
- Whole house fans must not be operated.
- Occupants should avoid excessive operation of clothes dryers, range hoods, bathroom fans and other mechanical systems that draw air out of the building.
- Wood burning fireplaces must not be operated unless they are the primary sources of heat for the dwelling.

We thank you for your cooperation in helping to ensure safe and healthy homes.

Sincerely,

Daniel P. Sullivan
Vice President, Operations
Office 203-865-5605
Cell 203-996-3621

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ChemScope *INDUSTRIAL HYGIENE • ENVIRONMENTAL CHEMISTRY*
15 Moulthrop Street, North Haven, CT 06473-3686 • Phone (203) 865-5605 • Fax (203) 498-1610

COMPLIANCE AGREEMENT

Dear occupant of 153 Twin Brook Road, Hamden, CT,

An important step is being taken to help ensure healthy conditions in your home. It is important that required test conditions be maintained.

Please sign this form and add any comments to help ensure accurate tests:

To the best of my knowledge, the required conditions were kept during the test.
Occupant X _____ **Date** 5/21/14

Comments if any: _____

_____

_____

Device Pick-up Day Wednesday Date 5/21/2014 Time 8:17am

Required Closed-building conditions:

- Closed-building conditions must be maintained for 12 hours prior to the initiation of measurements lasting less than four days and throughout the test period.
- All windows on all levels must be kept closed and external doors must be kept closed (except for momentary entry and exit).
- Heating and cooling systems must be set to normal, occupied operating temperatures; fan/blower controls must be set to intermittent activity unless continuous activity is a permanent setting.
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Sincerely,

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National Radon Proficiency Program

February 20, 2013

Daniel Sullivan
Chem Scope, Inc.
15 Moulthrop Street
North Haven, CT 06473

Residential Measurement Provider

NRPP Certification Number: 107005 RT

NRPP Expiration Date: 2/28/2015

Your NRPP identification card is enclosed. Your certification will expire on the date indicated above. Information regarding the National Radon Program may be obtained by visiting our web site located at nrpp.info.

Comments:

Best regards,

Angel Anderson Price

Angel Anderson Price, Executive Director, NRPP

Non-Photo ID

Administrative Office ~P.O. Box 2109 ~ Fletcher, NC 28732 828.890.4117
~ fax 828.890-4161~ e-mail angel@radon.com ~ www.radongas.org

ChemScope INDUSTRIAL HYGIENE • ENVIRONMENTAL CHEMISTRY
15 Moulthrop Street, North Haven, CT 06473-3686 • Phone (203) 865-5605 • Fax (203) 498-1610

Scott Feulner
Diversified Technology Consultants (DTC)
2321 Whitney Avenue, Suite 301
Hamden, CT 06518

5/6/2014

PRELIMINARY MOLD ASSESSMENT
SITE 003 – 153 TWIN BROOK ROAD, HAMDEN, CT
APPLICATION #2072
CS#183-76, 4/25/2014, PAGE 1 OF 4

TABLE OF CONTENTS

Attachments:

- Scope of Assessment Drawing – 1 page(s)

Report Distribution:

Scott Feulner, DTC Scott.Feulner@teamdtc.com
Curtis Graham, DTC graham.curtis@teamdtc.com
Michael Casey, DTC michael.casey@teamdtc.com

File Location:

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This investigation and information provided in this report depends partly on background information provided by the client. This report is intended for the use of the client. The scope of services performed may not be appropriate for other users and any use of this report by third parties is at their sole risk. This report is intended to be used in its entirety. No excerpts may be taken to be representative of this report.

It is possible that hidden mold may be growing inside the building cavities. Some floor, wall or ceiling demolition would be needed to find hidden mold.

INTRODUCTION

EXECUTIVE SUMMARY: Based on our assessment, there is no visible mold in the subject Kitchen and Living Room of the subject house. There are signs of past water damage to the ceilings and some walls of the subject areas, which were dry at the time of our assessment.

BUILDING DESCRIPTION: The subject building is a single-family, one-story, ranch-style house totaling approximately 1000 sq ft, which was built in 1951 of wood-frame construction. Heat is supplied from a furnace in the basement, through forced air ducts.

BACKGROUND: We understand the subject house suffered damage as a result of hurricane Sandy on October 29-30, 2012. The house is scheduled to be renovated. We understand the storm caused roof damage, which lead to moisture damage in the Kitchen and Living Room. Based on this damage the following items are scheduled for removal and replacement: kitchen floor, kitchen ceiling, kitchen walls, living room ceiling and living room wall A.

INSPECTION AND TESTING: Dan Sullivan of Chem Scope, Inc.was at the site on 4/25/2014 to conduct the subject tests. All of the doors and windows were closed at the time of our inspection. Our work included:

- Visual inspection
- Temperature/Humidity and Moisture in building materials

SCOPE OF WORK: Our client has hired us to do a preliminary mold assessment of the kitchen and living room, where there was past water damage.

MOLD ASSESSMENT REPORT SYNOPSIS

Observations from Visual Inspection/temperature and humidity testing:

I arrived on site at around 8:00 AM. The temperature at the time of our assessment was about 55 deg F. We were let into the house by our client and the homeowner. There was no visible mold or noticable smells/odors in the subject rooms.

The temperature and humidity, inside vs outside was determined using a sling psychrometer. Normal dew point levels are generally considered between 10 and 21 °C (50 and 69 °F). In areas with dew points under 10 °C (50 °F), the air is considered too dry. In areas with dew points above 21 °C (69 °F), the air is considered too humid. Normal relative humidity for a house is 30-50% depending on the outdoor climate. Humidity and dew points in the house were normal for the exterior conditions that day.

Table 1 - Temperature & Humidity Results (4/25/2014)

Location	Dry Bulb (°F) (Room / Air Temperature)	Wet Bulb (°F)	%RH	Dew Point (°F)
Kitchen	66	56.5	55	49
Living Room	64	56	60	50
Exterior	54	50	76	46

Continued

MOLD ASSESSMENT REPORT SYNOPSIS (cont)

A Protimeter Moisture Measurement System (Marlow England) was used to measure the amount of moisture in various surfaces and materials in terms of wood moisture equivalents (WME). This device has two pin-point probes, which are inserted in the surface and the conductivity is used to measure moisture in the material as % H_2O. Moisture is important to detect potential biological growth. The normal amount of moisture in each material varies with humidity. Materials which have >30% H_2O are relatively damp and may be wet enough to permit mold growth. A material with 70% H_2O is very wet and likely to have mold growth. This instrument does not measure below 7% moisture, which is considered bone dry. This device was also used to test for room temperature, % relative humidity and dew point. The dew point is a measure of the absolute amount of water in the air and is more useful in comparisons than the relative humidity, which is also affected by temperature.

A Summary of the moisture readings and visual inspection is listed in Table below:

Table 2 –% Moisture in Building materials (4/25/2014)

Room/ Material	% Moisture	Notes
Kitchen/ Sheetrock walls	8-10%	No visible mold, signs of past water-damage
Kitchen/ Sheetrock ceiling	8-10%	No visible mold, signs of past water-damage
Kitchen/ Linoluem floor	8-10%	No visible mold
Kitchen/ Wood floor under linoleum	8-10%	No visible mold
Living Room/ Sheetrock ceiling	8-10%	No visible mold, signs of past water-damage
Living Room/ Sheetrock wall A	8-10%	No visible mold, signs of past water-damage
Living Room/ hardwood floor	<8%	No visible mold

General Information about Mold: EPA does not call for routinely air testing for mold in assessment. Mold is always present indoors and outdoors and is a natural and necessary part of the environment. There are no Connecticut or federal health based standards for molds. EPA and other agencies report that molds have the potential to cause health effects. The main concerns are people with allergies, asthma and compromised immune systems. There are thousands of mold species, and many are not yet identified. There is much more to learn and new information is becoming available regularly. In mold assessment, we strive to detect moisture problems that cause excessive biological growth and when appropriate, recommend a plan of corrective action. When moisture problems occur, mold growth is likely if organic materials are not promptly dried up. Hidden mold may exist which cannot be seen without demolition.

RECOMMENDATIONS

No immediate work is required as a result of our assessment. We understand the ceilings and some of the walls in the Kitchen and Dining Room are to be removed. If during this renovation work hidden mold is discovered, work should be stopped and the areas should be re-assessed.

In general, correction of water damage requires first eliminating the source of the water. We understand the roof has already been repaired.

Limitations of Mold Removal: It is well known in the industry that mold can never completely be removed from a site because of the constant presence of mold spores in the outdoor environment and the ability of molds to remain dormant within a building. If moisture problems recur, mold growth is likely.

For guidance on mold, log onto EPA.gov and search mold remediation or the state DPH web site.

See our separate Asbestos Pre-renovation Inspection Report and Lead XRF Pre-renovation Screening Report for further details.

Please call me if there are any questions about this report or if you need further assistance.

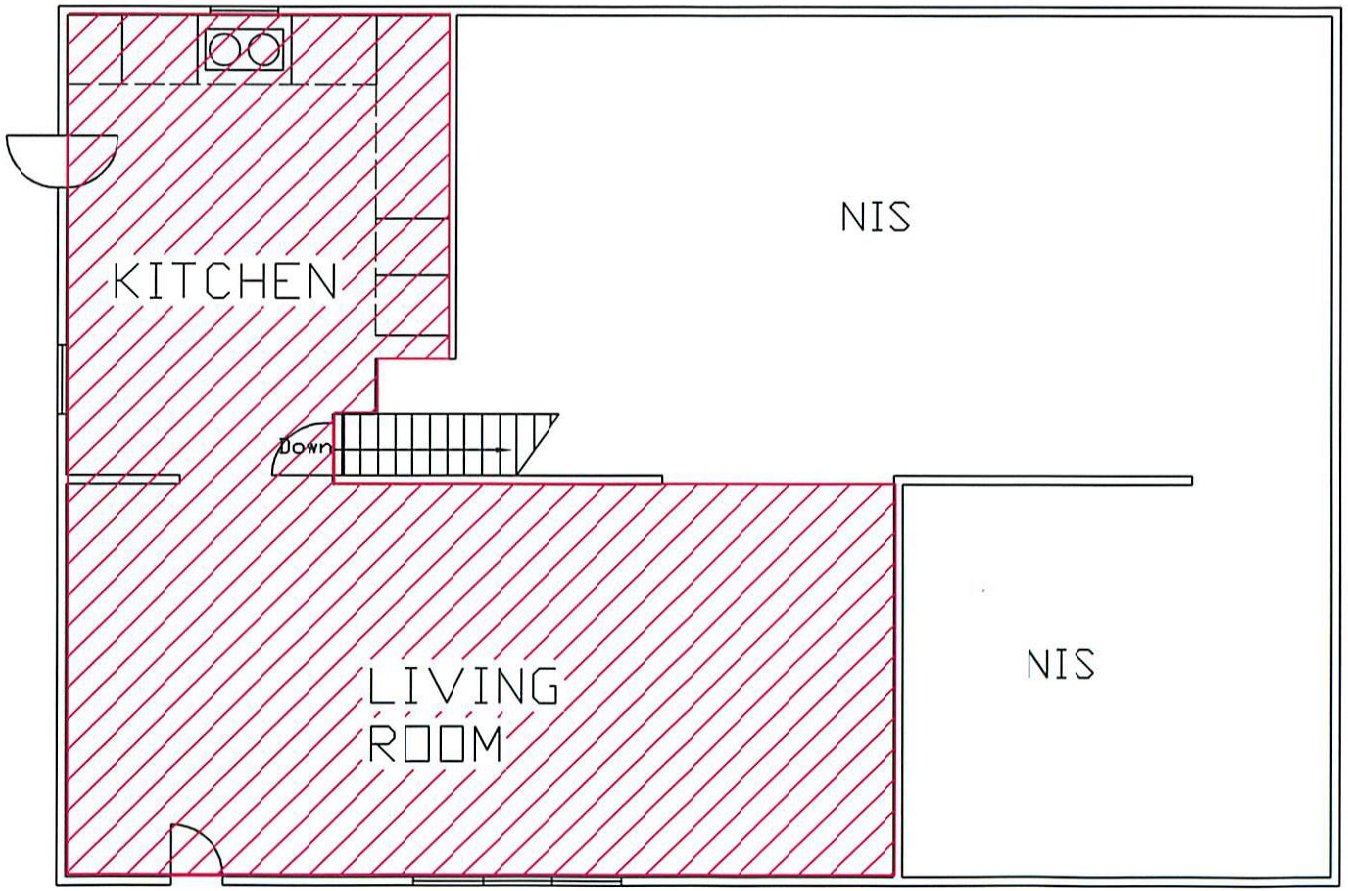
Thank you for calling on us.

Dan Sullivan
Vice President, Operations

ChemScope Inc.

Site 003
153 Twin Brook Road, Hamden, CT
Main Floor
CS# 183-76, 4-25-14

SCOPE OF INSPECTION DRAWING



LEGEND OF SYMBOLS	
	Scope of Inspection
NIS	Not in Scope of Inspection

NOTATIONS

DRAWN BY:
LEIGH HONOROF

ChemScope Inc.

SHEET TITLE:

ASBESTOS, LEAD & MOLD INSPECTION

153 TWIN BROOK RD HAMDEN, CT

MAIN FLOOR

CHEMSCOPE NUMBER:	DRAWING NUMBER
CS# 183-76	1 S
SCALE: NOT TO SCALE	
DATE: 4/25/14	

ATTACHMENT 15

Town of Hamden
Property Listing Report

Parcel ID 2323-107-00-0000

Account

Property Information

Owner	SMITH CHETINA
Address	153 TWIN BROOK RD
Mailing Address	153 TWIN BROOK RD HAMDEN , CT 06514
Land Use	- Single Fam M01
Land Class	R

Census Tract	6
Neighborhood	70
Zoning	R4
Acreage	0.17
Utilities	
Lot Setting/ Desc	/ Level

Photo

PARCEL VALUATIONS (Assessed value = 70% of Appraised Value)

	Appraised	Assessed
Buildings	84600	59220
Outbuildings	0	0
Improvements	84600	59220
Extras	0	0
Land	73700	51590
Total	158300	110810
Previous		

Construction Details

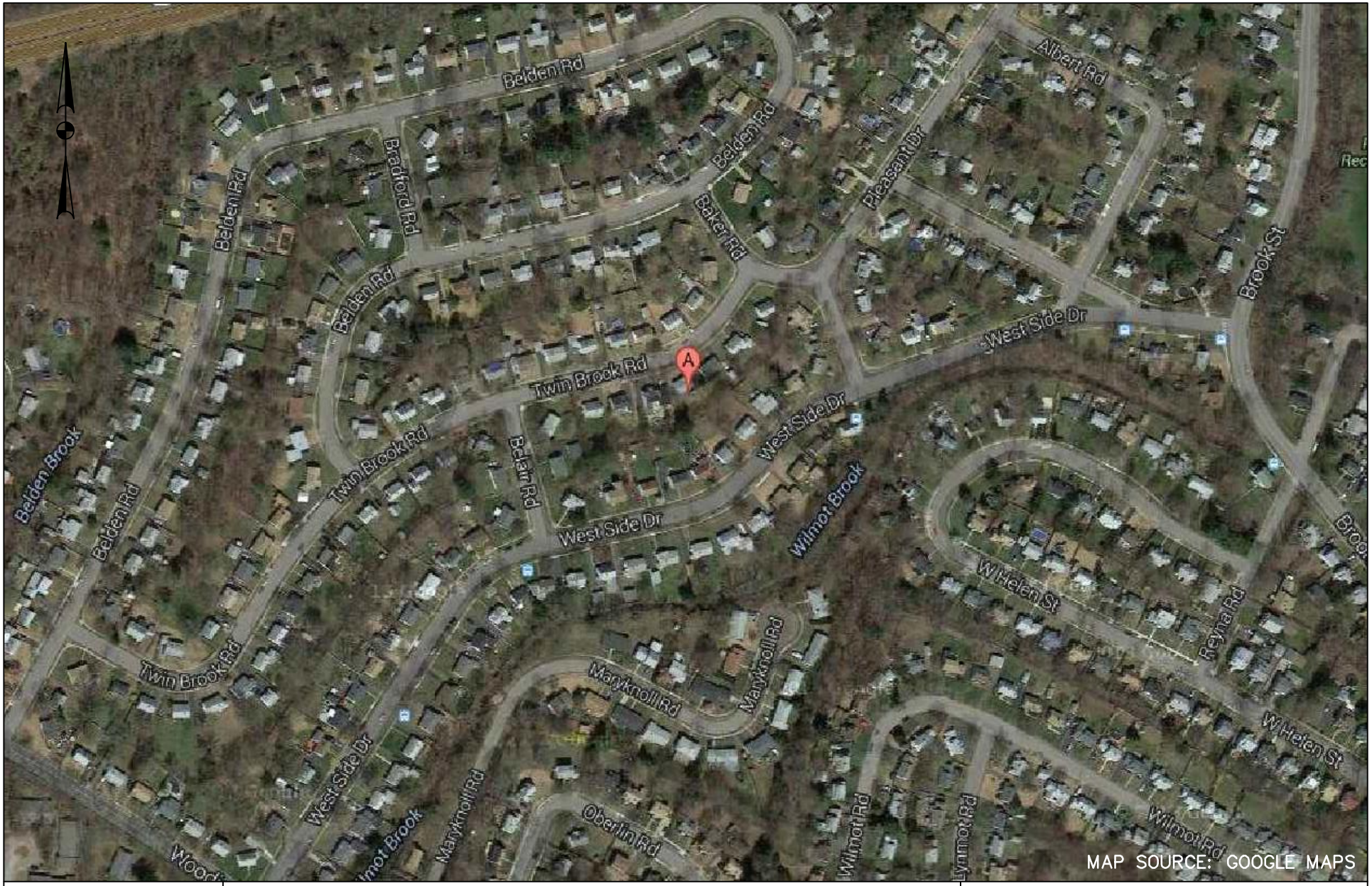
Year Built	
Stories	1
Building Style	Ranch
Building Use	Residential
Building Condition	C
Total Rooms	5
Bedrooms	2 Bedrooms
Full Bathrooms	0
Half Bathrooms	
Bath Style	Average
Kitchen Style	Average
Roof Style	Gable
Roof Cover	Asphalt

EXTERIOR WALLS:	
Primary	Wood Shingle
Secondary	
INTERIOR WALLS:	
Primary	Drywall
Secondary	
FLOORS:	
Primary	Carpet
Secondary	
HEATING/AC:	
Heating Type	Forced Air-Duc
Heating Fuel	Oil
AC Type	None

BUILDING AREA:	
Effective Building Area	
Gross Building Area	2224
Total Living Area	988

SALES HISTORY:	
Sale Date	10/12/2005
Sale Price	174000
Book/ Page	3032/ 246

Report Created On 2/3/2014



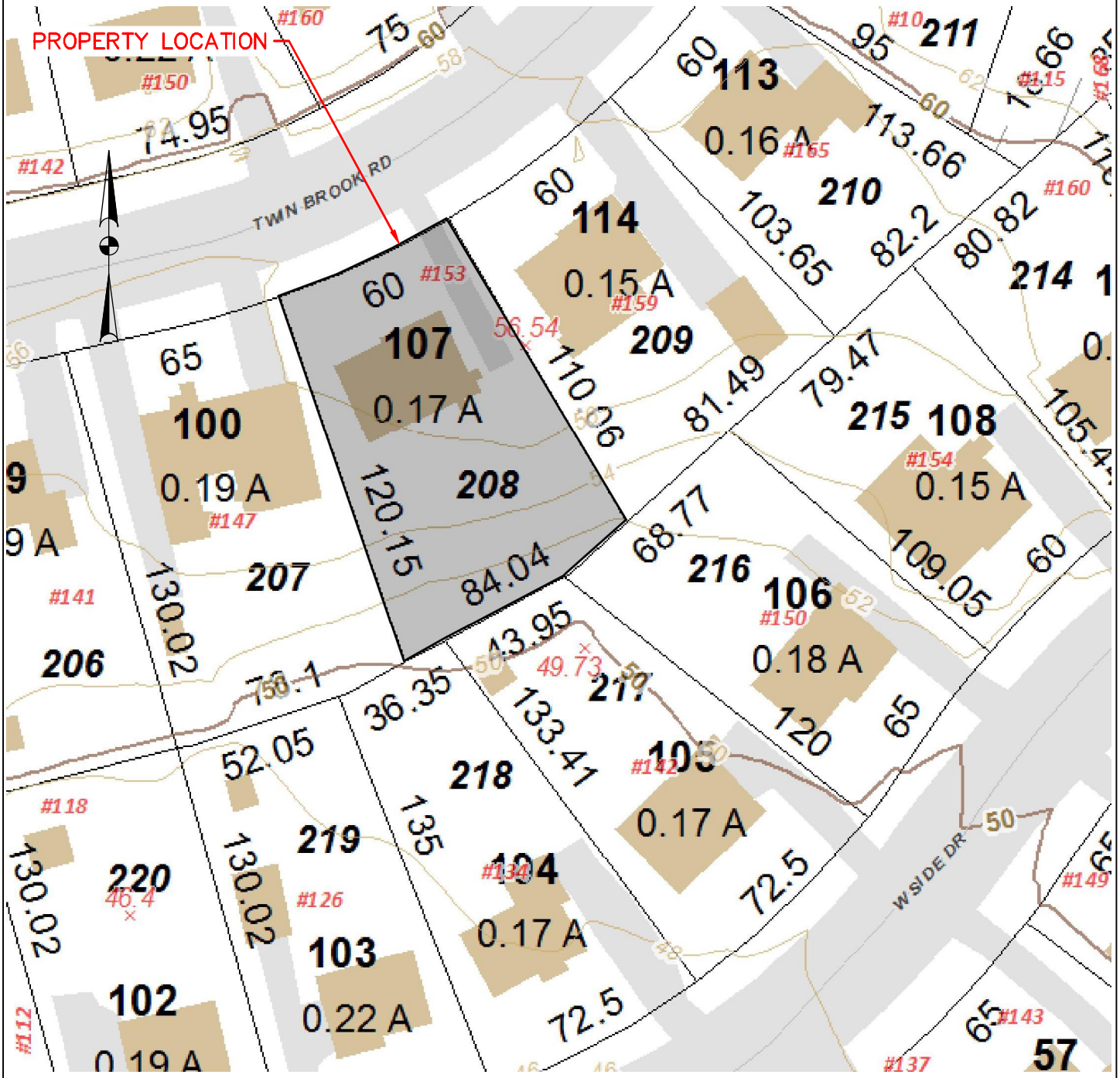
DIVERSIFIED TECHNOLOGY CONSULTANTS
2321 Whitney Avenue - Hamden Center II - Hamden CT 06518
Ph: 203 239 4200 Fax: 203 234 7376

DEPARTMENT OF HOUSING
COMMUNITY DEVELOPMENT BLOCK GRANT
DISASTER RECOVERY

153 TWIN BROOK ROAD
HAMDEN, CT

AERIAL PHOTOGRAPH

SCALE: NTS		DRAWN BY: LEC	
PROJECT NUMBER: 13-449-003	APPLICANT NO: 2072	DATE: 06/10/14	CHECKED BY: JAB



GRAPHIC SCALE

50 0 25 50

(IN FEET)

MAP SOURCE: TOWN OF HAMDEN GIS

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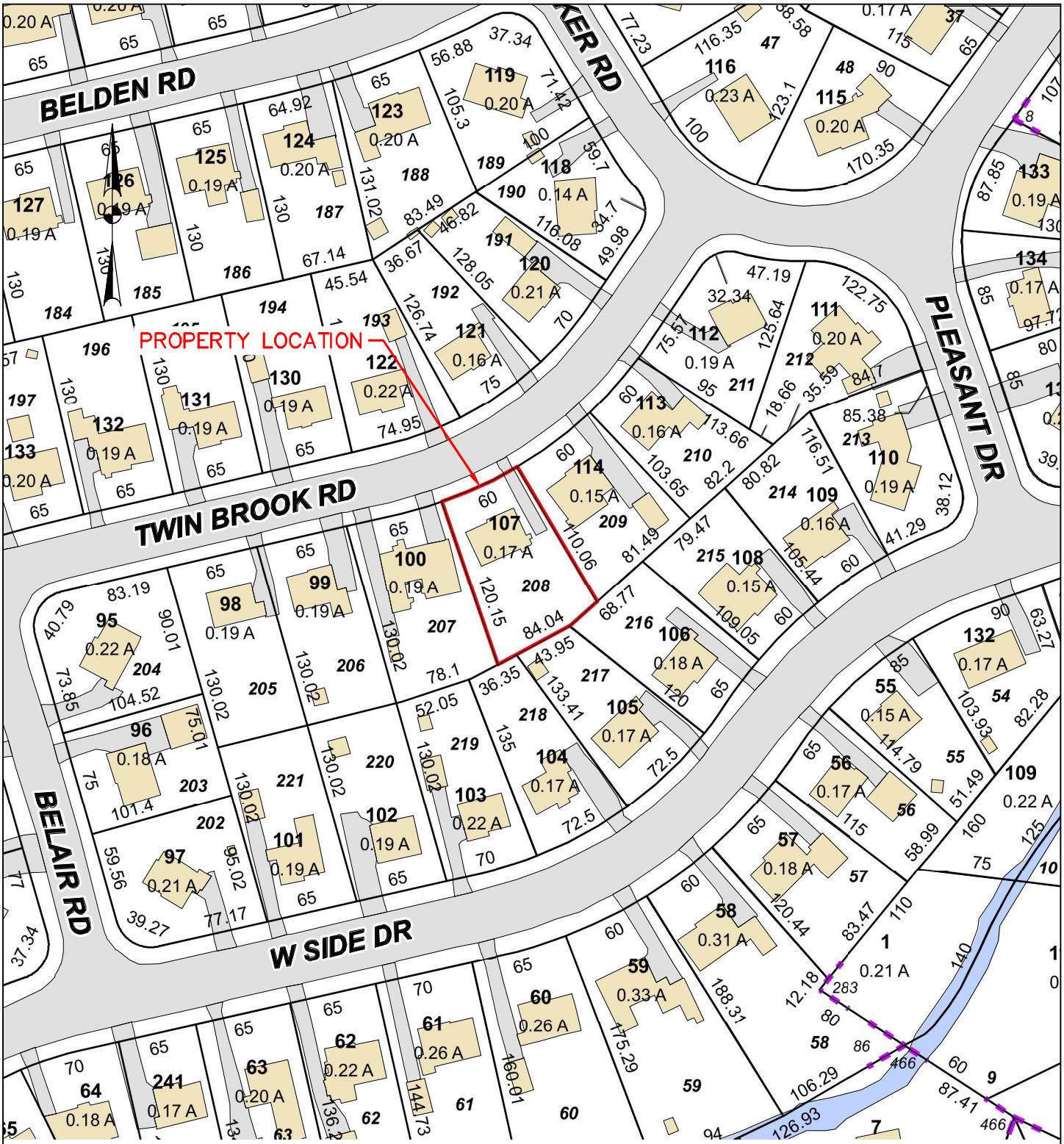
DEPARTMENT OF HOUSING
COMMUNITY DEVELOPMENT BLOCK GRANT
DISASTER RECOVERY

153 TWIN BROOK ROAD
HAMDEN, CT

TOWN TOPO

PROJECT NUMBER:	13-449-003	APPLICANT NO:	2072

SCALE:	1"=50'	DRAWN BY:	LEC
DATE:	06/10/2014	CHECKED BY:	JAB



GRAPHIC SCALE

100 0 50 100

(IN FEET)

MAP SOURCE: TOWN OF HAMDEN GIS

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DEPARTMENT OF HOUSING
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153 TWIN BROOK ROAD
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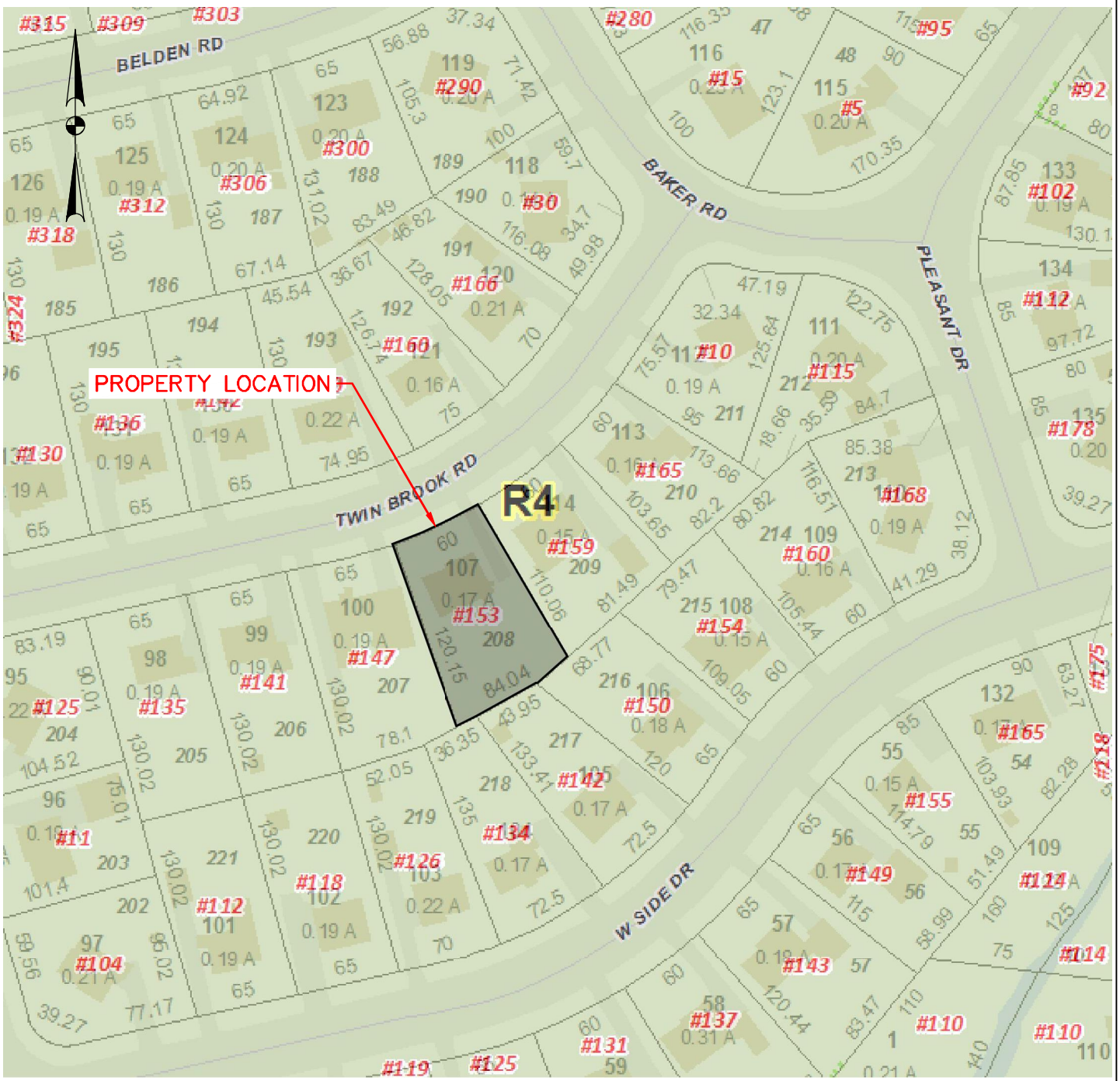
TAX ASSESSORS MAP

SCALE:	1"=100'	DRAWN BY:	LEC
PROJECT NUMBER:	13-449-003	APPLICANT NO:	2072
DATE:	06/10/2014	CHECKED BY:	JAB



GRAPHIC SCALE

100 0 50 100

(IN FEET)

MAP SOURCE: TOWN OF HAMDEN GIS

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DEPARTMENT OF HOUSING
COMMUNITY DEVELOPMENT BLOCK GRANT
DISASTER RECOVERY

153 TWIN BROOK ROAD
HAMDEN, CT

ZONING MAP

PROJECT NUMBER:	13-449-003	APPLICANT NO:	2072

SCALE:	1"=100'	DRAWN BY:	LEC
DATE:	06/10/2014	CHECKED BY:	JAB